



## QUIZZES

### Practice Test No. 1



5 Questions



5 min

#### Topics

Introduction, Modern definition of organic chemistry

[Start Quiz](#)



1/5



5 min



Hint

Q : The vital force theory was rejected by the



J. Berzilius



John Dalton



F. Wholer



Moseley





2/5



5 min



Hint

Q : The chemist who synthesized urea from ammonium cyanate was



Berzelius



Kolbe



Wohler



Lavoisier



3/5



5 min



Hint

Q : Urea belongs to which class of compounds?



Imides



Amines



Amides



Carboxylic acid



4/5



5 min



Hint

Q :

According to the modern definition, organic chemistry is that branch of chemistry which deals with the study of



carbon compounds only



carbohydrates and hydrocarbons



hydrocarbons and their derivatives



carbohydrates and their derivatives



5/5



5 min



Hint

Q : Vital force theory was rejected by



G.N Lewis



F. Wohler



Kekule



Berzellius



Correct



Unattempted



Incorrect



1/5

Q : The vital force theory was rejected by the



J. Berzilius



John Dalton



F. Wholer



Moseley





Correct



Unattempted



Incorrect



2/5

Q : The chemist who synthesized urea from ammonium cyanate was



Berzelius



Kolbe



Wohler



Lavoisier



Correct



Unattempted



Incorrect



3/5

Q : Urea belongs to which class of compounds?



Imides



Amines



Amides



Carboxylic acid





Correct



Unattempted



Incorrect



4/5

Q:

According to the modern definition, organic chemistry is that branch of chemistry which deals with the study of



carbon compounds only



carbohydrates and hydrocarbons



hydrocarbons and their derivatives



carbohydrates and their derivatives







Correct



Unattempted



Incorrect



5/5

Q : Vital force theory was rejected by



G.N Lewis



F. Wohler



Kekule



Berzellius

## Explanation

In 1828, Frederick Wohler, a German scientist diminished all the old concepts by proving that no vital force is required for the synthesis of organic compounds. They can be prepared artificially.





## QUIZZES

### Practice Test No. 2



5 Questions



5 min

Topics

Coal, Petroleum

Start Quiz



1/5



5 min



Hint

Q : Which one of the following is a product of destructive distillation of coal



Coke



Coal tar



Coal gas



All of these



2/5



5 min



Hint

Q : Boiling range of kerosene oil is



60–100°C



175–325°C



40–220°C



20–60°C



3/5



5 min



Hint

Q : The crude petroleum is separated in fractions by



Filtration



Fractional distillation



Steam distillation



Fractional sublimation



4/5



5 min



Hint

Q : The total coal resources of Pakistan estimated by geological survey of Pakistan are



184 billion tones



481 billion tones



841 billion tones



In huge reservoirs



5/5



5 min



Hint

Q : Petrol and paraffin have been mixed together. By which method they can be separated easily



Fractional distillation



Crystallization



Evaporation



Filtration



Correct



Unattempted



Incorrect



1/5

Q : Which one of the following is a product of destructive distillation of coal



Coke



Coal tar



Coal gas



All of these

## Explanation

Thermal decomposition of coal into coke, coal gas and coal tar at  $500-1000^{\circ}\text{C}$  in the absence of air ( $\text{O}_2$ ) is called destructive distillation or carbonization.







Correct



Unattempted



Incorrect



2/5

Q : Boiling range of kerosene oil is



60–100°C



175–325°C



40–220°C



20–60°C

## Explanation

Boiling range of kerosene oil is 175–325°C



Correct



Unattempted



Incorrect



3/5

Q : The crude petroleum is separated in fractions by



Filtration



Fractional distillation



Steam distillation



Fractional sublimation

## Explanation

The separation of components of a mixture according to their boiling points is called fractional distillation.

Petroleum mainly contains alkanes (C-1 to C-40), cycloalkane and benzene but the major component is alkanes which are separated by fractional distillation.





Correct



Unattempted



Incorrect



4/5

Q : The total coal resources of Pakistan estimated by geological survey of Pakistan are



184 billion tones



481 billion tones



841 billion tones



In huge reservoirs

## Explanation

The coal resources in Pakistan are estimated by the Geological Survey of Pakistan to be 184 billion tonnes. 80% of this coal is used in lime kiln to bake bricks and some for domestic purposes.





Correct



Unattempted



Incorrect



5/5

Q : Petrol and paraffin have been mixed together. By which method they can be separated easily



Fractional distillation



Crystallization



Evaporation



Filtration

## Explanation

The separation of components of a mixture on the base of the there boiling point is called fractional distillation





## QUIZZES

### Practice Test No. 3



5 Questions



5 min

#### Topics

CRACKING OF PETROLEUM, Cracking of  
petroleum, Types of cracking

[Start Quiz](#)



1/5



5 min



Hint

Q :

Good quality of petroleum is obtained by



Thermal cracking



Steam cracking



Catalytic cracking



Combustion



2/5



5 min



Hint

Q : Higher hydrocarbons can be cracked at low temperature by:



Thermal cracking



Catalytic cracking



Steam cracking



All of the above



3/5



5 min



Hint

Q : Thermal decomposition of a hydrocarbon in the absence of air is called:



oxidation



reduction



cracking



hydrolysis





4/5



5 min



Hint

Q : Liquid hydrocarbons are converted to a number of gaseous hydrocarbons by



Distillation



Oxidation



Hydrolysis



Cracking



5/5



5 min



Hint

Q : Higher hydrocarbons can be cracked at low temperature by



Thermal cracking



Catalytic cracking



Steam cracking



All of the above



Correct



Unattempted



Incorrect



1/5

Q :

Good quality of petroleum is obtained by



Thermal cracking



Steam cracking



Catalytic cracking



Combustion





Correct



Unattempted



Incorrect



2/5

Q : Higher hydrocarbons can be cracked at low temperature by:



Thermal cracking



Catalytic cracking



Steam cracking



All of the above





Correct



Unattempted



Incorrect



3/5

Q : Thermal decomposition of a hydrocarbon in the absence of air is called:



oxidation



reduction



cracking



hydrolysis





Correct



Unattempted



Incorrect



4/5

Q : Liquid hydrocarbons are converted to a number of gaseous hydrocarbons by



Distillation



Oxidation



Hydrolysis



Cracking





Correct



Unattempted



Incorrect



5/5

Q : Higher hydrocarbons can be cracked at low temperature by



Thermal cracking



Catalytic cracking



Steam cracking



All of the above

## Explanation

Breaking down of higher hydrocarbons into lower hydrocarbons in the presence of catalyst ( $\text{Al}_2\text{O}_3 + \text{SiO}_2$ ) at lower temperature ( $500^\circ\text{C}$ ) is called catalytic cracking.

In the process of cracking, bigger alkane molecules are heated to in the absence of air and in the presence of a mixture of silica ( $\text{SiO}_2$ ) and alumina ( $\text{Al}_2\text{O}_3$ ) as a catalyst.







Correct



Unattempted



Incorrect



5/5

Q : Higher hydrocarbons can be cracked at low temperature by



Thermal cracking



Catalytic cracking



Steam cracking



All of the above

## Explanation

Breaking down of higher hydrocarbons into lower hydrocarbons in the presence of catalyst ( $\text{Al}_2\text{O}_3 + \text{SiO}_2$ ) at lower temperature ( $500^\circ\text{C}$ ) is called catalytic cracking.

In the process of cracking, bigger alkane molecules are heated to in the absence of air and in the presence of a mixture of silica ( $\text{SiO}_2$ ) and alumina ( $\text{Al}_2\text{O}_3$ ) as a catalyst.







## QUIZZES

### Practice Test No. 4



4 Questions



5 min

Topics

REFORMING OF PETROL

[Start Quiz](#)



1/4



5 min



Hint

Q : Reforming is the process to \_\_\_\_\_

A

Increase the quality of fuel

B

Increase the efficiency of fuel

C

Decrease the knocking

D

All of these



2/4



5 min



Hint

Q :

Octane number 100 is given to



n-Octane



n-Heptane



2, 2, 4-Trimethyl pentane



2, 2, 4-Trimethyl octane



3/4



5 min



Hint

Q : The octane number of a poor fuel can also be improved by blending it with small amount of additive like



lead oxide



tetraethyl lead



n-octane



gasoline



4/4



5 min



Hint

Q : Tetraethyl lead ( $\text{C}_2\text{H}_5$ )<sub>4</sub>Pb is used in gasoline as



promoter



autocatalyst



knock inhibitor



base



Correct



Unattempted



Incorrect



1/4

Q : Reforming is the process to \_\_\_\_\_



Increase the quality of fuel



Increase the efficiency of fuel



Decrease the knocking



All of these

## Explanation

Reforming is the process to Increase the quality of fuel, Increase the efficiency of fuel and Decrease the knocking





Incorrect



2/4

Q :

Octane number 100 is given to

A

n-Octane

B

n-Heptane

C

2, 2, 4-Trimethyl pentane

D

2, 2, 4-Trimethyl octane

## Explanation

The percentage of branched chain hydrocarbon (Isooctane) in the gasoline fraction of petroleum is called octane number. The quality of gasoline is indicated by its octane number.

- Branched chain hydrocarbons burn smoothly. Hence, have high octane number and make good fuel.
- 2,2,4-Tri-methylpentane or Isooctane burns smoothly and is arbitrarily assigned an octane number 100.

Straight chain hydrocarbons burn rapidly. They have low octane number and make poor fuel. That is why it also causes knocking.



Correct



Unattempted



Incorrect



3/4

Q : The octane number of a poor fuel can also be improved by blending it with small amount of additive like



lead oxide



tetraethyl lead



n-octane



gasoline

## Explanation

Knocking can be minimized by adding Tetraethyl lead in the gasoline. Tetraethyl lead is a negative catalyst for the combustion of gasoline and is an efficient knocking agent.





Correct



Unattempted



Incorrect



4/4

Q : Tetraethyl lead ( $\text{C}_2\text{H}_5$ )<sub>4</sub>Pb is used in gasoline as



promoter



autocatalyst



knock inhibitor



base

## Explanation

Knocking can be minimized by adding Tetraethyl lead in the gasoline. Tetraethyl lead is a negative catalyst for the combustion of gasoline and is an efficient knocking agent.



## QUIZZES

### Practice Test No. 5



5 Questions



5 min

#### Topics

CLASSIFICATION OF ORGANIC COMPOUNDS,  
Open chain or Cycilic Compounds

[Start Quiz](#)



1/5



5 min



Hint

Q : Which one of the following is heterocyclic compound



Thiophene



Pyrrole



Furan



All of these



2/5



5 min



Hint

Q :

Anthracene contains \_\_\_\_\_ number of fused benzene rings:



1



2



3



4



3/5



5 min



Hint

Q : Pyridine is an example of:



A Homocyclic compound



B Heterocyclic compound



C Carbocyclic compound



D Aliphatic compound



4/5



5 min



Hint

Q : Which one of the following is not heterocyclic compound



thiophene



anthracene



furan



pyrrole



5/5



5 min



Hint

Q : Thiophene is an example of



Homocyclic compound



Heterocyclic compound



Carbocyclic compound



Aliphatic compound



Correct



Unattempted



Incorrect



1/5

Q : Which one of the following is heterocyclic compound



Thiophene



Pyrrole



Furan



All of these







Correct



Unattempted



Incorrect



2/5

Q:

Anthracene contains \_\_\_\_\_ number of fused benzene rings:



1



2



3



4





Correct



Unattempted



Incorrect



3/5

Q : Pyridine is an example of:



Homocyclic compound



Heterocyclic compound

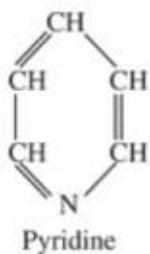


Carbocyclic compound



Aliphatic compound

## Explanation





Correct



Unattempted



Incorrect



4/5

Q : Which one of the following is not heterocyclic compound



thiophene



anthracene



furan



pyrrole





Correct



Unattempted



Incorrect



5/5

Q : Thiophene is an example of



Homocyclic compound



Heterocyclic compound



Carbocyclic compound



Aliphatic compound

## Explanation



Thiophene

1

2

3

4

5



## QUIZZES

### Practice Test No. 6



5 Questions



5 min

Topics

FUNCTIONAL GROUP

Start Quiz



1/5



5 min



Hint

Q : Select from the following the one which is alcohol

 $\text{CH}_3\text{-CH}_2\text{-OH}$  $\text{CH}_3\text{-O-CH}_3$  $\text{CH}_3\text{COOH}$  $\text{CH}_3\text{CH}_2\text{-Br}$



2/5



5 min



Hint

Q : -SH functional group is called



Cyano



Mercapto



Nitro



Carboxyl



3/5



5 min



Hint

Q : Which of the following is an amide?

 $(\text{NH}_2)_2\text{CO}$  $\text{NH}_2\text{CH}_3$  $\text{C}_6\text{H}_5\text{NH}_2$  $\text{N}(\text{CH}_3)_3$





4/5



5 min



Hint

Q : Select the one of the following which is ketone

 $\text{CH}_3\text{COCH}_3$  $\text{CH}_3 - \text{CH}_3$  $\text{CH}_3\text{CH}_2\text{OH}$  $\text{CH}_3 - \text{Cl}$



5/5



5 min



Hint

Q : -SH functional group is called



Cyano



Mercapto



Nitro



Carboxyl



Correct



Unattempted



Incorrect



1/5

Q : Select from the following the one which is alcohol

 $\text{CH}_3\text{-CH}_2\text{-OH}$  $\text{CH}_3\text{-O-CH}_3$  $\text{CH}_3\text{COOH}$  $\text{CH}_3\text{CH}_2\text{-Br}$



Correct



Unattempted



Incorrect



2/5

Q : -SH functional group is called



Cyano



Mercapto



Nitro



Carboxyl





Correct



Unattempted



Incorrect



3/5

Q : Which of the following is an amide?

 $(\text{NH}_2)_2\text{CO}$  $\text{NH}_2\text{CH}_3$  $\text{C}_6\text{H}_5\text{NH}_2$  $\text{N}(\text{CH}_3)_3$ 

## Explanation

 $(\text{NH}_2)_2\text{CO}$  amide $\text{NH}_2\text{CH}_3$  Methyl amine $\text{C}_6\text{H}_5\text{NH}_2$  Phenyl amine $\text{N}(\text{CH}_3)_3$  tertiary amine



Correct



Unattempted



Incorrect



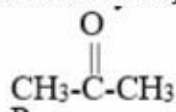
4/5

Q : Select the one of the following which is ketone

 $\text{CH}_3\text{COCH}_3$  $\text{CH}_3 - \text{CH}_3$  $\text{CH}_3\text{CH}_2\text{OH}$  $\text{CH}_3 - \text{Cl}$ 

## Explanation

when carbonyl group is attached directly with 2 carbon etonic group





Correct



Unattempted



Incorrect



5/5

Q : -SH functional group is called



Cyano



Mercapto



Nitro



Carboxyl





## QUIZZES

### Practice Test No. 7



5 Questions



5 min

#### Topics

Hybridization,  $sp^3$  Hybridization,  $sp^2$   
Hybridization,  $sp$  Hybridization

[Start Quiz](#)





1/5



5 min



Hint

Q : The state of hybridization of all carbons in 1,3-butadiene is

 $sp^3$  $sp^2$  $sp$  $dsp^2$



2/5



5 min



Hint

Q : The type of hybridization of carbon atom in methane is:



sp

 $sp^2$  $sp^3$  $dsp^2$



3/5



5 min



Hint

Q : Trigonal planar shape is associated with the type of hybridization is



sp

 $sp^2$  $sp^3$  $dsp^2$



4/5



5 min



Hint

Q : The percentage of s character in  $sp^2$  hybrid orbital is



25%



33.3%



50%



All are possible



5/5



5 min



Hint

Q : In sp-hybridization, the angle between two hybrid orbitals is



120°



180°



109.5°



90°



Correct



Unattempted



Incorrect

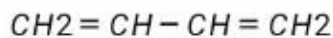


1/5

Q : The state of hybridization of all carbons in 1,3-butadiene is

 $sp^3$  $sp^2$  $sp$  $dsp^2$ 

## Explanation



1,3- butadiene

in 1,3- butadiene every carbon is forms 3 sigma bonds and one  $\pi$  bond so each carbon is  $sp^2$  hybridize



Correct



Unattempted



Incorrect



2/5

Q : The type of hybridization of carbon atom in methane is:



sp

 $sp^2$  $sp^3$  $dsp^2$ 

## Explanation

In methane carbon atom form 4 sigma bond with 4 different hydrogen atom





Correct



Unattempted



Incorrect



3/5

Q : Trigonal planar shape is associated with the type of hybridization is



sp

 $sp^2$  $sp^3$  $dsp^2$ 





Correct



Unattempted



Incorrect



4/5

Q : The percentage of s character in  $sp^2$  hybrid orbital is



25%



33.3%



50%



All are possible

### Explanation

$$\% \text{ of } s \text{ character} = \frac{1}{3} \times 100 = 33.3 \%$$



Correct



Unattempted



Incorrect



5/5

Q : In sp-hybridization, the angle between two hybrid orbitals is



120°



180°



109.5°



90°

### Explanation

sp hybridization the shape of hybrid orbital is linear and bond angle in 180°



## QUIZZES

### Practice Test No. 8



5 Questions



5 min

#### Topics

Isomerism, Types of structural isomerism,  
Cis-trans isomerism geometric isomerism

[Start Quiz](#)



1/5



5 min



Hint

Q :

Number of isomers of  $C_4H_{10}$  is

1



2



3



4



2/5



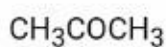
5 min



Hint

Q :  $\text{C}_3\text{H}_7\text{OH}$  is the functional group isomer of:

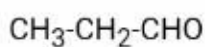
A



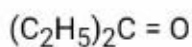
B



C



D





3/5



5 min



Hint

Q : n-hexane and 2-methyl pentane are examples of



Metamerism



Chain isomerism



Functional group isomerism



Position isomerism.



4/5



5 min



Hint

Q : Which of the following compound may exist as cis-trans isomers?



1-Butene



2-Butene



Cyclopropane



Acetone



5/5



5 min



Hint

Q : n-Butanol and diethyl ether are



A Geometrical isomers



B Position isomers



C Chain isomers



D Functional group isomers





Correct



Unattempted



Incorrect



1/5

Q :

Number of isomers of  $C_4H_{10}$  is

1



2



3



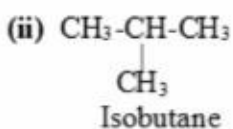
4

## Explanation

(i)



(ii)





Correct



Unattempted



Incorrect



2/5

Q :  $\text{C}_3\text{H}_7\text{OH}$  is the functional group isomer of:

 $\text{CH}_3\text{COCH}_3$  $\text{CH}_3\text{OC}_2\text{H}_5$  $\text{CH}_3\text{-CH}_2\text{-CHO}$  $(\text{C}_2\text{H}_5)_2\text{C} = \text{O}$ 

## Explanation

The compounds that have same molecular formula but differ with respect to functional group are called functional group isomers and phenomenon is called functional group isomerism. both have same molecular formula which is  $\text{C}_3\text{H}_8\text{O}$



Correct



Unattempted



Incorrect



3/5

Q : n-hexane and 2-methyl pentane are examples of



Metamerism



Chain isomerism



Functional group isomerism



Position isomerism.

## Explanation

### Chain Isomerism or skeletal Isomerism:

The compounds which have same molecular formula but differ with respect to carbon chain (carbon skeleton) are called chain isomers and phenomenon is called chain isomerism.





Incorrect



4/5

Q : Which of the following compound may exist as cis-trans isomers?



1-Butene



2-Butene



Cyclopropane



Acetone

## Explanation

- **Conditions to show geometric isomerism:**

(i) There should be a double bond between the two carbon atoms.  
As a result,

which position of groups become fixed due to restricted rotation.

Two groups attached to the same carbon atoms must be different.



Correct



Unattempted



Incorrect



5/5

Q : n-Butanol and diethyl ether are



Geometrical isomers



Position isomers



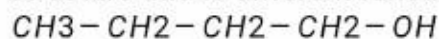
Chain isomers



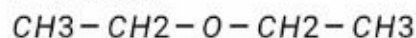
Functional group isomers

## Explanation

Both has same molecular formula which  $C_4H_{10}O$  but have different structure due to different functional of group



*n-butanol*



*diethyle ether*





## QUIZZES

### Practice Test No. 9



5 Questions



5 min

#### Topics

INTRODUCTION OF ALIPHATIC HYDROCARBONS

[Start Quiz](#)



1/5



5 min



Hint

Q : Presence of double bond in an organic compound is the sign of



A Saturation



B Substitution



C Unsaturation



D Halogenation





2/5



5 min



Hint

Q : All are homocyclic compounds except one



Cyclopropane



Benzene



Naphthalene



Pyridine





3/5



5 min



Hint

Q : The presence of double or triple bond in a compound is the sign of



Unsaturated



Saturation



Addition



Substitution



4/5



5 min



Hint

Q : If all the valencies of the carbon atoms in a molecule are fully satisfied, then the hydrocarbons are



Alkanes



Unsaturated hydrocarbons



Alkenes



Alkynes



5/5



5 min



Hint

Q : All are homocyclic compounds except



Cyclopropane



Benzene



Naphthalene



Pyridine



Correct



Unattempted



Incorrect



1/5

Q : Presence of double bond in an organic compound is the sign of



Saturation



Substitution



Unsaturation



Halogenation





Correct



Unattempted



Incorrect



2/5

Q : All are homocyclic compounds except one



Cyclopropane



Benzene



Naphthalene



Pyridine





Correct



Unattempted



Incorrect



3/5

Q : The presence of double or triple bond in a compound is the sign of



Unsaturated



Saturation



Addition



Substitution





Correct



Unattempted



Incorrect



4/5

Q : If all the valencies of the carbon atoms in a molecule are fully satisfied, then the hydrocarbons are



Alkanes



Unsaturated hydrocarbns



Alkenes



Alkynes





Correct



Unattempted



Incorrect



5/5

Q : All are homocyclic compounds except



Cyclopropane



Benzene

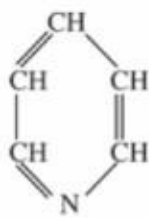


Naphthalene



Pyridine

## Explanation



Pyridine





## QUIZZES

### Practice Test No. 10



3 Questions



5 min

#### Topics

Common or Trivial Names, Nomenclature of  
Alkynes

[Start Quiz](#)



1/3



5 min



Hint

Q : Marsh gas is



Ethene



Acetylene



Heptane



Methane



2/3



5 min



Hint

Q : The common names of alkenes have the suffix



one



ylene



eylene



yne



3/3



5 min



Hint

Q : IUPAC name of Vinylacetylene is



But-3-en-1-yne



But-1-en-3-yne



But-2-en-1-yne



But-1-en-2-yne



Correct



Unattempted



Incorrect



1/3

Q : Marsh gas is



Ethene



Acetylene



Heptane



Methane

## Explanation

Methane is found at marshy place due to its called marsh gas



Correct



Unattempted



Incorrect



2/3

Q : The common names of alkenes have the suffix



one



ylene



eylene



yne

## Explanation

Suffix use alkene common name is ylene



Correct



Unattempted



Incorrect



3/3

Q : IUPAC name of Vinylacetylene is



But-3-en-1-yne



But-1-en-3-yne

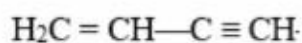


But-2-en-1-yne



But-1-en-2-yne

Explanation





## QUIZZES

### Practice Test No. 11



5 Questions



5 min

#### Topics

ALKANE OR PARAFFINS, Alkanes or paraffins,  
General methods of preparation - I, General  
methods of preparation - II

[Start Quiz](#)





1/5



5 min



Hint

Q : The conditions required for the catalytic oxidation of methane to form formic acid are



Cu



400°C



200 atm



All of these



2/5



5 min



Hint

Q : The alkane which is a solid. The alkane which is a solid.

 $C_{10}H_{22}$  $C_{16}H_{34}$  $C_8H_{18}$  $C_{21}H_{44}$



3/5



5 min



Hint

Q : Which of the following compound is paraffin?



Acetylene



Propane



Ethylene



Benzene



4/5



5 min



Hint

Q : Grignard's reagent produce alkane by reacting with



Water



Aldehydes



Ketones



Carbon dioxide



5/5



5 min



Hint

Q : Conversion of sodium acetate to methane in the presence of dry soda lime is called:



Carboxylation



Decarboxylation



Dehydration



Hydrogenation



Correct



Unattempted



Incorrect



1/5

Q : The conditions required for the catalytic oxidation of methane to form formic acid are



Cu



400°C



200 atm



All of these



Correct



Unattempted



Incorrect



2/5

Q : The alkane which is a solid. The alkane which is a solid.

 $C_{10}H_{22}$  $C_{16}H_{34}$  $C_8H_{18}$  $C_{21}H_{44}$ 



Incorrect



3/5

Q : Which of the following compound is paraffin?

A

Acetylene

B

Propane

C

Ethylene

D

Benzene

## Explanation

Alkanes are **saturated** hydrocarbons because four valencies of each carbon atom are satisfied by single bonds either with other carbon atoms or with hydrogen atoms. Alkanes are the simplest organic compounds and **Methane (CH<sub>4</sub>)** is the simplest member of the family. Their general formula is **C<sub>n</sub>H<sub>2n+2</sub>**. Alkanes are **saturated** hydrocarbons because four valencies of each carbon atom are satisfied by single bonds either with other carbon atoms or with hydrogen atoms. Alkanes are the simplest organic compounds and **Methane (CH<sub>4</sub>)** is the simplest member of the family. Their general formula is **C<sub>n</sub>H<sub>2n+2</sub>**.





Correct



Unattempted



Incorrect



4/5

Q : Grignard's reagent produce alkane by reacting with



Water



Aldehydes

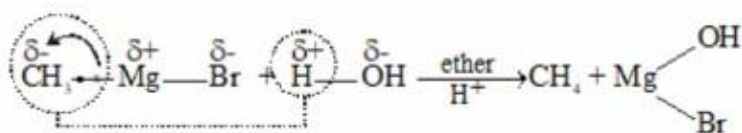


Ketones



Carbon dioxide

## Explanation



Q : Conversion of sodium acetate to methane in the presence of dry soda lime is called:

### A Carboxylation

## B Decarboxylation

**C** Dehydration

### D Hydrogenation

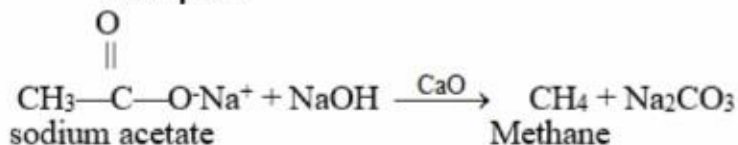
### Explanation

(i) **Decarboxylation by soda lime.**

Soda lime is prepared by soaking quick lime ( $\text{CaO}$ ) with Caustic soda ( $\text{NaOH}$ ) solution and finally drying the product.

Soda lime eliminates a molecule  $\text{CO}_2$  from sodium salts of carboxylic acids when heated with them.

**Examples:**





## QUIZZES

### Practice Test No. 12



5 Questions



5 min

#### Topics

Reactions - I, Uses of methane

[Start Quiz](#)



1/5



5 min



Hint

Q : The reaction of methane with  $\text{Cl}_2$  to form chloroform and carbon tetrachloride is



Addition reaction



Substitution reaction



Oxidation reaction



Combustion reaction



2/5



5 min



Hint

Q : The order of reactivity of halogens with alkane is

 $I_2 > Br_2 > Cl_2 > F_2$  $F_2 > Cl_2 > Br_2 > I_2$  $Cl_2 > F_2 > Br_2 > I$  $I_2 > F_2 > Cl_2 > Br_2$



3/5



5 min



Hint

Q : Formula of chloro Methane is

 $\text{CH}_3\text{Cl}$  $\text{CCl}_4$  $\text{CH}_2\text{Cl}_2$  $\text{CHCl}_3$



4/5



5 min



Hint

Q : Catalytic oxidation of alkane is done at  $400^{\circ}\text{C}$  and 200atm in the presence of



Cu

 $\text{Ag}_2\text{O}$  $\text{KMnO}_4$ 

Pd / C



5/5



5 min



Hint

Q : When one is not the use of methane



A As an illuminating gas



B As an anesthetic agent



C Preparation of carbon black



D To manufacture urea fertilizer





Correct



Unattempted



Incorrect



1/5

Q : The reaction of methane with  $\text{Cl}_2$  to form chloroform and carbon tetrachloride is



Addition reaction



Substitution reaction



Oxidation reaction



Combustion reaction





Incorrect



2/5

Q : The order of reactivity of halogens with alkane is

A

 $I_2 > Br_2 > Cl_2 > F_2$ 

B

 $F_2 > Cl_2 > Br_2 > I_2$ 

C

 $Cl_2 > F_2 > Br_2 > I$ 

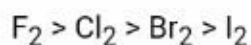
D

 $I_2 > F_2 > Cl_2 > Br_2$ 

## Explanation

### Reactivity of halogens:

- Fluorine reacts with alkane violently and forms a mixture of carbon, fluorinated alkanes and hydrofluoric acid.
- Iodine does not substitute directly because reaction is too slow and reversible.
- Chlorine and Bromine react in controlled manner and at considerable rate giving appreciable yield of the product.
- The reactivity order of halogens is as,





Correct



Unattempted



Incorrect



3/5

Q : Formula of chloro Methane is

 $\text{CH}_3\text{Cl}$  $\text{CCl}_4$  $\text{CH}_2\text{Cl}_2$  $\text{CHCl}_3$ 



Correct



Unattempted



Incorrect



4/5

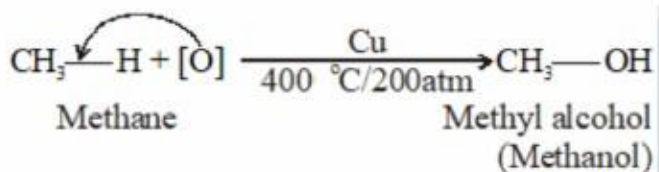
Q : Catalytic oxidation of alkane is done at  $400^{\circ}\text{C}$  and  $200\text{atm}$  in the presence of



Cu

 $\text{Ag}_2\text{O}$  $\text{KMnO}_4$  $\text{Pd} / \text{C}$ 

### Explanation



Q : When one is not the use of methane

A

As an illuminating gas

B

As an anesthetic agent

C

Preparation of carbon black

D

To manufacture urea fertilizer

## Explanation

### Uses of Methane:

Methane is used:

- As a fuel and as an illuminating gas.
- For the preparation of methyl chloride, methylene chloride, chloroform and carbon tetrachloride.
- For the industrial preparation of methyl alcohol, formaldehyde and hydrogen cyanide.
- For the preparation of carbon black used in paints, printing inks and automobile tyres.

To manufacture urea fertilizer.



## QUIZZES

### Practice Test No. 13



5 Questions



5 min

#### Topics

ALKENES, Alkenes, Physical properties

[Start Quiz](#)



1/5



5 min



Hint

Q :

Ozonolysis of ethene causes the breaking of  
C – C bond, the product is



Formaldehyde



Acetaldehyde



Ethylene glycol



Ethylene chlorohydrin



2/5



5 min



Hint

Q : Raney Nickel is obtained by treating Ni-Al alloy with

 $\text{KMnO}_4$  $\text{H}_2\text{SO}_4$  $\text{NaOH}$  $\text{NH}_4\text{OH}$





3/5



5 min



Hint

Q : Which of the following compound is olefin

 $C_2H_6$  $C_6H_{14}$  $C_2H_4$  $C_6H_6$



4/5



5 min



Hint

Q : Which one is not a property or use of mustard gas



Used in 1<sup>st</sup> world war



Powerful vesicant



High boiling liquid



High boiling gas



5/5



5 min



Hint

Q : Which of the following compound is olefin?

 $C_2H_6$  $C_6H_{14}$  $C_2H_4$  $C_6H_6$



Correct



Unattempted



Incorrect



1/5

Q :

Ozonolysis of ethene causes the breaking of  
C – C bond, the product is



Formaldehyde



Acetaldehyde



Ethylene glycol



Ethylene chlorohydrin



Correct



Unattempted



Incorrect



2/5

Q : Raney Nickel is obtained by treating Ni-Al alloy with

 $\text{KMnO}_4$  $\text{H}_2\text{SO}_4$  $\text{NaOH}$  $\text{NH}_4\text{OH}$ 



Correct



Unattempted



Incorrect



3/5

Q : Which of the following compound is olefin

 $C_2H_6$  $C_6H_{14}$  $C_2H_4$  $C_6H_6$ 



Correct



Unattempted



Incorrect



4/5

Q : Which one is not a property or use of mustard gas

Used in 1<sup>st</sup> world war

Powerful vesicant



High boiling liquid



High boiling gas





Correct



Unattempted



Incorrect



5/5

Q : Which of the following compound is olefin?

 $C_2H_6$  $C_6H_{14}$  $C_2H_4$  $C_6H_6$ 





## QUIZZES

### Practice Test No. 14



5 Questions



5 min

#### Topics

Addition reactions of Alkenes - I, Addition  
reactions of Alkenes - II

[Start Quiz](#)



1/5



5 min



Hint

Q : The reaction, used to locate the position of double bond in alkene is



Hydrogenolysis



Ozonolysis



Hydrolysis



Combustion



2/5



5 min



Hint

Q : The addition of hypohalous acid in alkene gives:



halides



alcohol



halohydrins



halo acids



3/5



5 min



Hint

Q : Which one readily give addition reaction with ethene



HI



HBr



HCl



HF



4/5



5 min



Hint

Q : Addition of HBr to propene gives



1-bromopropane



2-bromopropane



Both "a" and "b"



None of these



5/5



5 min



Hint

Q : Markownikov's rules is not applicable on



Ethene



Propene



1-Butene



1-Pentene



Correct



Unattempted



Incorrect



1/5

Q : The reaction, used to locate the position of double bond in alkene is



Hydrogenolysis



Ozonolysis



Hydrolysis



Combustion





Correct



Unattempted



Incorrect



2/5

Q : The addition of hypohalous acid in alkene gives:



halides



alcohol



halohydrins



halo acids

## Explanation

### Addition of hypohalous acid: (HOX)

When halogenations of an alkene is carried out in an aqueous solution, haloalcohol is formed. This is also called a **halohydrin**.





Correct



Unattempted



Incorrect



3/5

Q : Which one readily give addition reaction with ethene



HI



HBr



HCl



HF

## Explanation

Dry gaseous halogen acid react with alkenes to form alkyl halides.

The order of reactivity of halogen acids is

$\text{HI} > \text{HBr} > \text{HCl}$



Correct



Unattempted



Incorrect



4/5

Q : Addition of HBr to propene gives



1-bromopropane



2-bromopropane



Both "a" and "b"



None of these

## Explanation

propene is an unsymmetrical alkene an addition of HBr takes place through Markovnikov's rule



Correct



Unattempted



Incorrect



5/5

Q : Markownikov's rules is not applicable on



Ethene



Propene



1-Butene



1-Pentene

## Explanation

### Markownikov's Rule:

The negative part of the adding reagent adds to the carbon (constituting a double bond) which has less number of hydrogen atoms. This is called Markownikov's rule. This is only applicable when an **unsymmetrical reagent** is added to an **unsymmetrical alkene**.





## QUIZZES

### Practice Test No. 15



5 Questions



5 min

#### Topics

Alkynes, General methods of preparation - II,  
Physical characteristics, Addition reactions -  
I, Acidic nature of alkynes

**Start Quiz**



1/5



5 min



Hint

Q : A white ppt is formed, when ammonical  $\text{AgNO}_3$  reacts with.



Acetylene



Ethylene



Benzene



Dimethyl acetylene



2/5



5 min



Hint

Q : Acetylene has a characteristic ethereal smell resembling that of



Ginger



Vinegar



Garlic



Onion



3/5



5 min



Hint

Q : Electrolysis of aqueous solution of potassium salt of maleic acid yields



Ethane



Ethene



Ethyne



Benzene



4/5



5 min



Hint

Q : Addition of hydrogen accompanied by a bond cleavage is called



Hydrogenation



Hydrolysis



Hydrogenolysis



Hydroxylation





5/5

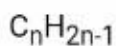
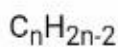
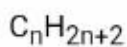


5 min



Hint

Q : The general formula of monoynes is





Correct



Unattempted



Incorrect



1/5

Q : A white ppt is formed, when ammonical  $\text{AgNO}_3$  reacts with.



Acetylene



Ethylene



Benzene



Dimethyl acetylene





Correct



Unattempted



Incorrect



2/5

Q : Acetylene has a characteristic ethereal smell resembling that of



Ginger



Vinegar



Garlic



Onion



Incorrect



3/5

Q : Electrolysis of aqueous solution of potassium salt of maleic acid yields



Ethane



Ethene

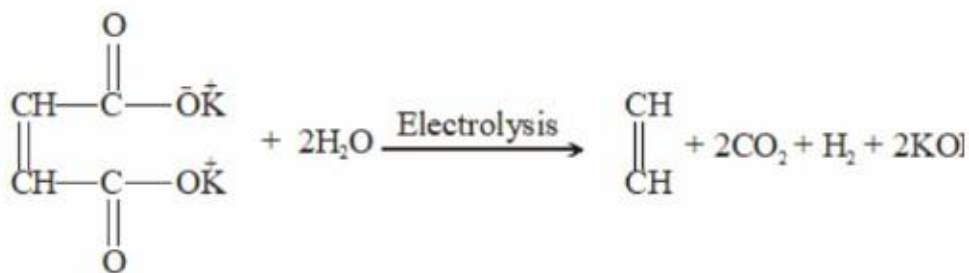


Ethyne



Benzene

### Explanation





Correct



Unattempted



Incorrect



4/5

Q : Addition of hydrogen accompanied by a bond cleavage is called



Hydrogenation



Hydrolysis



Hydrogenolysis



Hydroxylation





Correct



Unattempted

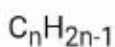
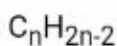
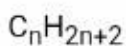


Incorrect



5/5

Q : The general formula of monoynes is





## QUIZZES

### Practice Test No. 16



5 Questions



5 min

#### Topics

INTRODUCTION, Introduction, Types of  
aromatic hydrocarbons

[Start Quiz](#)



1/5



5 min



Hint

Q : Which one of the following compounds is not aromatic?



Phenol



Toluene



Cyclohexane



Benzaldelyde





2/5



5 min



Hint

Q : Aromatic hydrocarbons are the derivatives of



A Normal series of paraffins



B Alkene



C Benzene



D Cyclohexane



3/5



5 min



Hint

Q : Aromatic hydrocarbons are the derivatives of



A Normal series of paraffins



B Alkene



C Benzene



D Cyclohexane



4/5



5 min



Hint

Q : Which one of the following compounds is polycyclic?



Xylene



Styrene



Toluene



Anthracene



5/5



5 min



Hint

Q : The number of possible isomers of xylene are



2



3



4



5



Correct



Unattempted



Incorrect



1/5

Q : Which one of the following compounds is not aromatic?



Phenol



Toluene



Cyclohexane



Benzaldelyde

## Explanation

Aromatic contain at least one benzene ring





Correct



Unattempted



Incorrect



2/5

Q : Aromatic hydrocarbons are the derivatives of



Normal series of paraffins



Alkene



Benzene



Cyclohexane





Correct



Unattempted



Incorrect



3/5

Q : Aromatic hydrocarbons are the derivatives of



Normal series of paraffins



Alkene



Benzene



Cyclohexane

## Explanation

those hydrocarbon which consist at least one benzene ring are called aromatic compounds





Correct



Unattempted



Incorrect



4/5

Q : Which one of the following compounds is polycyclic?



Xylene



Styrene



Toluene



Anthracene

## Explanation

### Polycyclic Aromatic Hydrocarbon:

Aromatic hydrocarbons containing two or more benzene rings in their molecules are called polycyclic aromatic hydrocarbons.





Incorrect



5/5

Q : The number of possible isomers of xylene are

A

2

B

3

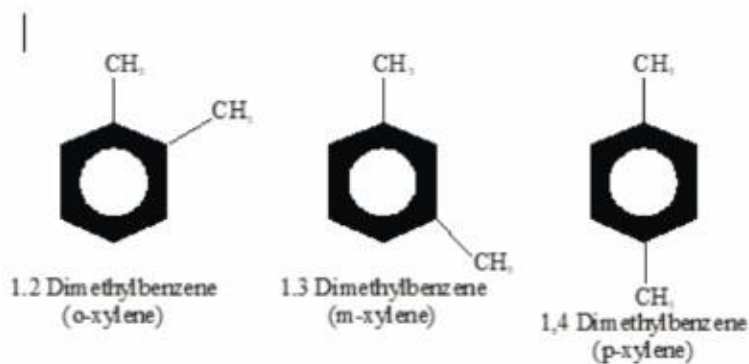
C

4

D

5

## Explanation





## QUIZZES

### Practice Test No. 17



5 Questions



5 min

#### Topics

NOMENCLATURE OF AROMATIC  
HYDROCARBONS

[Start Quiz](#)



1/5



5 min



Hint

Q : Which is the molecular formula of TNT

 $\text{C}_6\text{H}_5(\text{NO}_2)\text{CH}_3$  $\text{C}_6\text{H}_5(\text{NO}_2)_3\text{CH}_3$  $\text{C}_6\text{H}_5(\text{NO}_2)_3\text{C}_2\text{H}_5$  $\text{C}_6\text{H}_5(\text{NO}_2)_3\text{C}_3\text{H}_7$



2/5



5 min



Hint

Q : One of the following is aromatic hydrocarbon compound



Toluene



Phenol



Aniline



Chlorobenzene



3/5



5 min



Hint

Q : Which one of the following is not an aromatic compound?



Toluene



Phenol



Benzene



Maleic anhydride



4/5



5 min



Hint

Q : Which one of the following compounds, is not a derivative of benzene?



Aniline



Toluene



Pyridine



Phenol



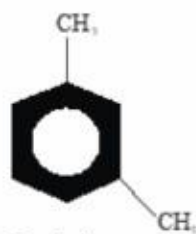
5/5



5 min



Hint



Q : \_\_\_\_\_

A

p-xylene

B

o-xylene

C

Toluene

D

m-xylene



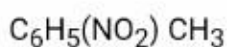
Incorrect



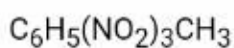
1/5

Q : Which is the molecular formula of TNT

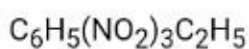
A



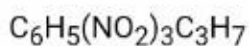
B



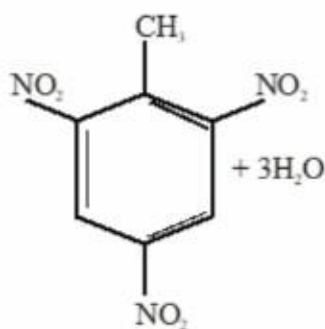
C



D



## Explanation







Incorrect



2/5

Q : One of the following is aromatic hydrocarbon compound



Toluene



Phenol



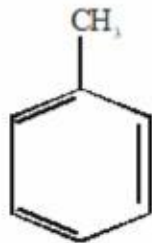
Aniline



Chlorobenzene

## Explanation

Because it consist only carbon and hydrogen atom





Incorrect



3/5

Q : Which one of the following is not an aromatic compound?



Toluene



Phenol



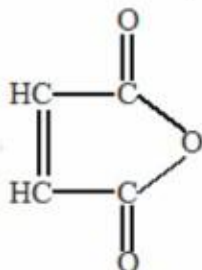
Benzene



Maleic anhydride

## Explanation

aromatic compounds contains at least one benzene in their sturcture



Maleic anhydride



Incorrect



4/5

Q : Which one of the following compounds, is not a derivative of benzene?



Aniline



Toluene



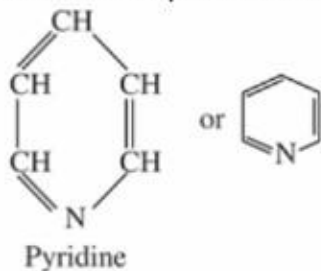
Pyridine

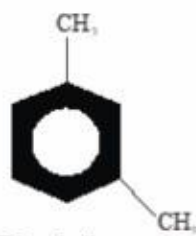


Phenol

## Explanation

aromatic compounds contains at least one benzene ring





Q: \_\_\_\_\_

A

p-xylene

B

o-xylene

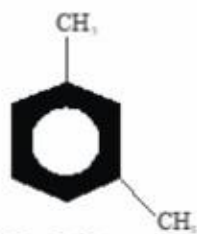
C

Toluene

D

m-xylene

## Explanation





## QUIZZES

### Practice Test No. 18



5 Questions



5 min

#### Topics

Structure of benzene, Straight chain structure ruled out, Kekules's structure

[Start Quiz](#)



1/5



5 min



Hint

Q : The structure of benzene is



Hexagonal irregular



Tetrahedral



Trigonal planar



Hexagonal planar



2/5



5 min



Hint

Q : Kekule structure of benzene does not justify



A Three double bonds in the ring



B Hexagonal planar ring



C Delocalized  $\pi$  - electrons



D Unsaturation of benzene



3/5



5 min



Hint

Q : Benzene ring is stabilized by



A Hydration energy



B Hydrogenation



C Resonance energy



D All of these





4/5



5 min



Hint

Q : Benzene gives how many disubstituted products



3



2



1



4



5/5



5 min



Hint

Q : Aromatic hydrocarbons have high % age of



H



C



O



N



Correct



Unattempted



Incorrect



1/5

Q : The structure of benzene is



Hexagonal irregular



Tetrahedral



Trigonal planar



Hexagonal planar





Correct



Unattempted



Incorrect



2/5

Q : Kekule structure of benzene does not justify



Three double bonds in the ring



Hexagonal planar ring

Delocalized  $\pi$  - electrons

Unsaturation of benzene



Correct



Unattempted



Incorrect



3/5

Q : Benzene ring is stabilized by



Hydration energy



Hydrogenation



Resonance energy



All of these



Q : Benzene gives how many disubstituted products

A 3

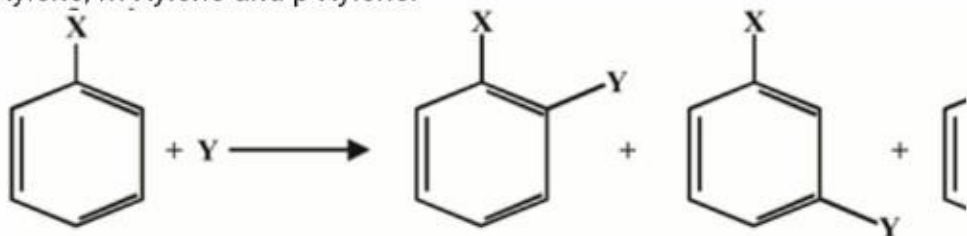
B 2

C 1

D 4

## Explanation

Benzene gives three isomeric disubstituted products having general formula  $C_6H_4X_2$  or  $C_6H_4XY$ , e.g. there are three isomeric Xylene i.e o-Xylene, m-Xylene and p-Xylene.





Correct



Unattempted



Incorrect



5/5

Q : Aromatic hydrocarbons have high % age of



H



C



O



N

### Explanation

In aromatic there maximum percentage of carbon atom as compared to other compound





## QUIZZES

### Practice Test No. 19



5 Questions



5 min

#### Topics

X-Rays study of benzene structure, Stability of benzene, Resonance method

[Start Quiz](#)





1/5



5 min



Hint

Q : Hexagonal structure of benzene was confirmed by



X-ray



Cathode rays



Canal rays



Alpha rays



2/5

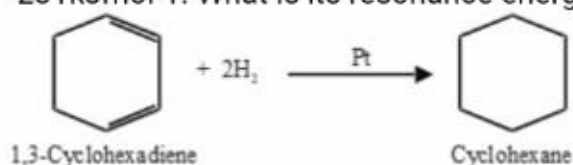


5 min



Hint

Q :  
For cyclohexene, heat of hydrogenation is  $-119.5 \text{ kJ mol}^{-1}$  while experimental value of heat of hydrogenation for the following reaction  $-231 \text{ kJ mol}^{-1}$ . What is its resonance energy



A

 $150.5 \text{ kJ mol}^{-1}$ 

B

 $231 \text{ kJ mol}^{-1}$ 

C

 $7.5 \text{ kJ mol}^{-1}$ 

D

 $-119.5 \text{ kJ mol}^{-1}$



3/5



5 min



Hint

Q : Which one of the following compounds has resonance structures?

 $C_6H_{12}$  $C_6H_6$  $C_6H_{14}$ 

All of these



4/5



5 min



Hint

Q : X-Rays studies show that benzene has a planar cyclic regular



A hexagonal uniform structure



B Tetrahedral



C Triangular planer



D Pentagonal



5/5



5 min



Hint

Q : On hydrogenation benzene liberates energy



358.5 kJ/mole



208 kJ/mole



272 kJ/mole



145.9 kJ/mole



Correct



Unattempted



Incorrect



1/5

Q : Hexagonal structure of benzene was confirmed by



X-ray



Cathode rays



Canal rays



Alpha rays

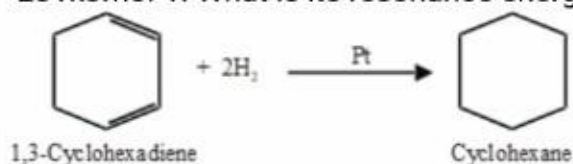
## Explanation

X-Rays studies show that benzene has a planar cyclic regular hexagonal uniform structure and all the angles are of  $120^\circ$ . The C-C bond length is  $1.397\text{\AA}$  and C-H bond length is  $1.09\text{\AA}$ .



Q :

For cyclohexene, heat of hydrogenation is  $-119.5 \text{ kJ mol}^{-1}$  while experimental value of heat of hydrogenation for the following reaction  $-231 \text{ kJ mol}^{-1}$ . What is its resonance energy



A  $150.5 \text{ kJ mol}^{-1}$

B  $231 \text{ kJ mol}^{-1}$

C  $7.5 \text{ kJ mol}^{-1}$

D  $-119.5 \text{ kJ mol}^{-1}$

## Explanation

Theoretical value =  $-239 \text{ kJ/mole}$

Experimental value =  $-231.5 \text{ kJ/mole}$

Difference =  $7.5 \text{ kJ/mole}$  ( resonance energy)



Incorrect



3/5

Q : Which one of the following compounds has resonance structures?

A

 $C_6H_{12}$ 

B

 $C_6H_6$ 

C

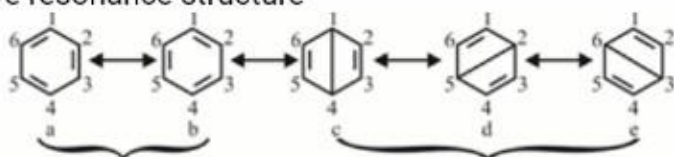
 $C_6H_{14}$ 

D

All of these

## Explanation

$C_6H_6$  is a molecular formula of benzene and it consists of three alternative double bonds and single bonds, that's why benzene consists of five resonance structures.



**Kekulé's Structures**  
Major Contributor (80%)  
to the real structure of benzene

**Dewar's Structures**  
Minor Contributor (20%)  
to the real structure of benzene





Correct



Unattempted



Incorrect



4/5

Q : X-Rays studies show that benzene has a planar cyclic regular



hexagonal uniform structure



Tetrahedral



Triangular planer



Pentagonal

## Explanation

X-Rays studies show that benzene has a planar cyclic regular hexagonal uniform structure and all the angles are of  $120^\circ$ . The C-C bond length is  $1.397\text{\AA}$  and C-H bond length is  $1.09\text{\AA}$ .

Q : On hydrogenation benzene liberates energy

A 358.5 kJ/mole

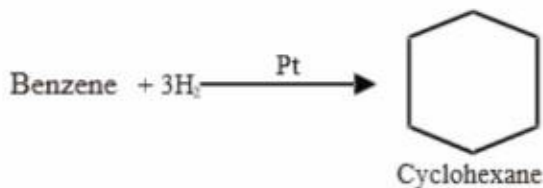
B 208 kJ/mole

C 272 kJ/mole

D 145.9 kJ/mole

## Explanation

Theoretical value = -358.5 kJ/mole (calculated heat of hydrogenation)



Experimental value = -208.0 kJ/mole (observed heat of hydrogenation)

Difference = -150.5 kJ/mole (resonance energy)

When the results are represented by the following figure, it becomes clear that the benzene is much more stable than what we expected according to calculation.



## QUIZZES

### Practice Test No. 20



5 Questions



5 min

#### Topics

Preparation of benzene - I, Preparation of  
benzene - II

[Start Quiz](#)



1/5



5 min



Hint

Q : Benzene is prepared from cyclohexane by the process called



Hydrogenation



Dehydration



Dehydrogenation



Hydration



2/5



5 min



Hint

Q : Amongst the following, the compound that can be most actively sulphonated



Toluene



Benzene



Nitrobenzene



Chlorobenzene



3/5



5 min



Hint

Q : Wurtz Fittig Reaction yields



Halo benzene



Methyl benzene



Alkyl benzene



Cyclohexane



4/5



5 min



Hint

Q : The hydrolysis of benzene sulphonic acid by boiling with \_\_\_\_\_ to give benzene.



HCl

 $\text{AlCl}_3$  $\text{H}_2\text{SO}_4$  $\text{HNO}_3$



5/5



5 min



Hint

Q : Benzene can be extracted from



Vegetable oil



Coal tar



Animal fat



Both a &amp; b





Correct



Unattempted



Incorrect



1/5

Q : Benzene is prepared from cyclohexane by the process called



Hydrogenation



Dehydration



Dehydrogenation



Hydration

## Explanation

Removal of hydrogen is called dehydrogenation. Cyclohexane contain ( $C_6H_{12}$ ) and by dehydrogenation six hydrogen are removed and three double bonds are formed.





Correct



Unattempted



Incorrect



2/5

Q : Amongst the following, the compound that can be most actively sulphonated



Toluene



Benzene



Nitrobenzene



Chlorobenzene



Incorrect



3/5

Q : Wurtz Fittig Reaction yields

A

Halo benzene

B

Methyl benzene

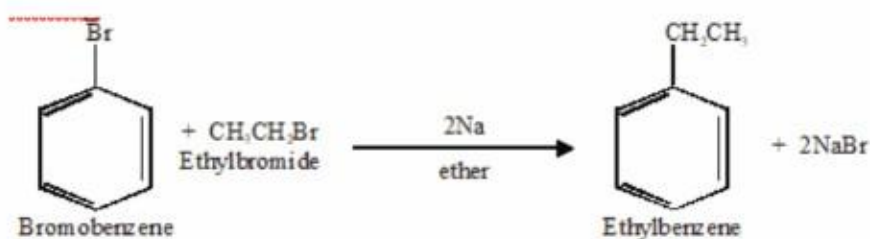
C

Alkyl benzene

D

Cyclohexane

## Explanation





Incorrect



4/5

Q : The hydrolysis of benzene sulphonic acid by boiling with \_\_\_\_\_ to give benzene.

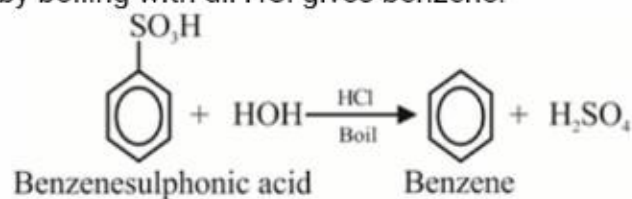


HCl

 $\text{AlCl}_3$  $\text{H}_2\text{SO}_4$  $\text{HNO}_3$ 

## Explanation

The hydrolysis of benzene sulphonic acid with superheated steam or by boiling with dil HCl gives benzene.





Correct



Unattempted



Incorrect



5/5

Q : Benzene can be extracted from



Vegetable oil



Coal tar



Animal fat



Both a &amp; b

## Explanation

Benzene was discovered by "Micheal Faraday in 1825 in the gas produced by the destructive distillation of vegetable oil and twenty years later (in 1845) it was also found in Coal tar by Hoffmann.





## QUIZZES

### Practice Test No. 21



5 Questions



5 min

#### Topics

General pattern of reactivity of benzene,  
Halogenation, Nitration, Sulphonation

[Start Quiz](#)



1/5



5 min



Hint

Q : During nitration of benzene, the active nitrating agent is

 $\text{NO}_3$  $\text{NO}_2^+$  $\text{NO}_2^-$  $\text{HNO}_3$



2/5



5 min



Hint

Q : The nitration of benzene takes place, when it is heated with \_\_\_\_\_ mixture of conc.  $\text{HNO}_3$  and conc  $\text{H}_2\text{SO}_4$  at  $50-55^\circ\text{C}$ .



1:2



2:1



1:3



1:1





3/5



5 min



Hint

Q : The electrophile in aromatic sulphonation is

 $\text{H}_2\text{SO}_4$  $\text{HSO}_4^-$  $\text{SO}_3$  $\text{SO}_3^+$



4/5



5 min



Hint

Q : Benzene cannot undergo



A Substitution reactions



B Addition reactions



C Oxidation reactions



D Elimination reaction



5/5



5 min



Hint

Q : The electrophile among the following is

 $\text{NH}_3$  $\text{AlCl}_3$  $\text{SO}_3$ 

Both



Correct



Unattempted



Incorrect



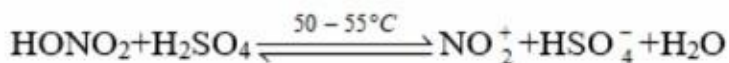
1/5

Q : During nitration of benzene, the active nitrating agent is

 $\text{NO}_3$  $\text{NO}_2^+$  $\text{NO}_2^-$  $\text{HNO}_3$ 

## Explanation

Sulphuric acid reacts with nitric acid to generate nitronium ion electrophile





Correct



Unattempted



Incorrect



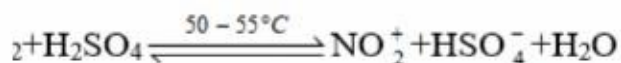
1/5

Q : During nitration of benzene, the active nitrating agent is

 $\text{NO}_3$  $\text{NO}_2^+$  $\text{NO}_2^-$  $\text{HNO}_3$ 

## Explanation

With nitric acid to generate nitronium ion ( $\text{NO}_2^+$ ) which act as a



Q : The nitration of benzene takes place, when it is heated with \_\_\_\_\_ mixture of conc.  $\text{HNO}_3$  and conc  $\text{H}_2\text{SO}_4$  at  $50-55^\circ\text{C}$ .

A 1:2

B 2:1

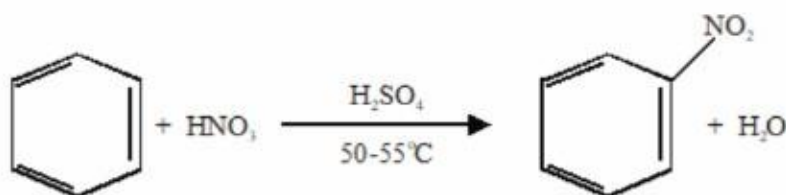
C 1:3

D 1:1

## Explanation

### Nitration:

The substitution of hydrogen atom by nitro group ( $-\text{NO}_2$ ) in benzene is called **Nitration**. The nitration of benzene takes place, when it is heated with 1:1 mixture of conc.  $\text{HNO}_3$  and conc  $\text{H}_2\text{SO}_4$  at  $50-55^\circ\text{C}$ .





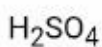
Incorrect



3/5

Q : The electrophile in aromatic sulphonation is

A



B



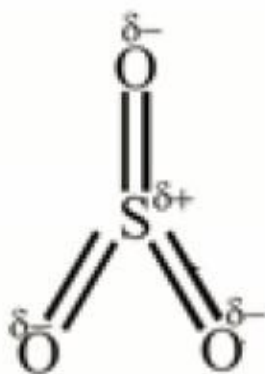
C



D



## Explanation



1

2

3

4

5



Correct



Unattempted



Incorrect



4/5

Q : Benzene cannot undergo



Substitution reactions



Addition reactions



Oxidation reactions



Elimination reaction







Correct



Unattempted



Incorrect



5/5

Q : The electrophile among the following is

 $\text{NH}_3$  $\text{AlCl}_3$  $\text{SO}_3$ 

Both

## Explanation

$\text{SO}_3$  use as electrophile in sulphonation and  $\text{AlCl}_3$  use as electrophile in friedel-Crafts reaction





## QUIZZES

### Practice Test No. 22



5 Questions



5 min

#### Topics

Friedal Craft reactions, Catalytic Oxidation,  
Ozonolysis

[Start Quiz](#)



1/5



5 min



Hint

Q :

Which of the following acid can be used as a catalyst in Friedel-Crafts reactions?

 $\text{AlCl}_3$  $\text{HNO}_3$  $\text{BeCl}_2$  $\text{NaCl}$



2/5



5 min



Hint

Q : Ozonolysis of benzene give



Glycol



Carbon dioxide + water



Glyoxal



Ethanol



3/5



5 min



Hint

Q : When benzene is reacted with acetyl chloride in the presence of  $\text{AlCl}_3$  to produce \_\_\_\_\_



Toulene



Acetophenone



Aniline



Benzaldehyde



4/5



5 min



Hint

Q : Electrophile among the following is:

 $\text{NH}_3$  $\text{H}_2\text{O}$  $\text{AlCl}_3$  $\text{Cl}_2$



5/5



5 min



Hint

Q : The benzene ring is oxidized to maleic anhydride when strongly heated with



Ni/200°C

 $V_2O_5/450^\circ C$  $AlCl_3/150^\circ C$ 

Pt/250°C



Correct



Unattempted



Incorrect



1/5

Q :

Which of the following acid can be used as a catalyst in Friedel-Crafts reactions?

 $\text{AlCl}_3$  $\text{HNO}_3$  $\text{BeCl}_2$  $\text{NaCl}$ 

## Explanation

The substitution of hydrogen of the benzene ring by an alkyl group is called Friedel-Crafts Alkylation. In this reaction, benzene reacts with alkyl halide in the presence of a catalyst  $\text{AlCl}_3$ .





Correct



Unattempted



Incorrect



2/5

Q : Ozonolysis of benzene give



Glycol



Carbon dioxide + water



Glyoxal

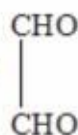


Ethanol

## Explanation

 $+ 3O_3 \longrightarrow$  $C_6H_6O_9$  $\xrightarrow{3H_2O}$ 

3



Glyoxal

Benzene triozone





Incorrect



3/5

Q : When benzene is reacted with acetyl chloride in the presence of  $\text{AlCl}_3$  to produce \_\_\_\_\_



Toulene



Acetophenone

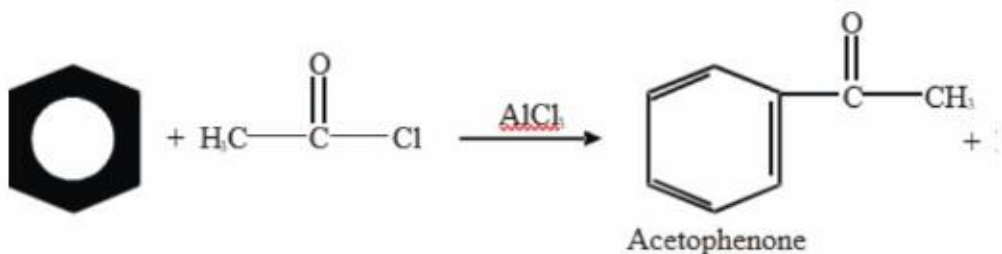


Aniline



Benzaldehyde

### Explanation





Correct



Unattempted



Incorrect



4/5

Q : Electrophile among the following is:

 $\text{NH}_3$  $\text{H}_2\text{O}$  $\text{AlCl}_3$  $\text{Cl}_2$ 

## Explanation

Aluminium has 6 electron in its outer most shell. So it electron deficient





Incorrect



5/5

Q : The benzene ring is oxidized to maleic anhydride when strongly heated with

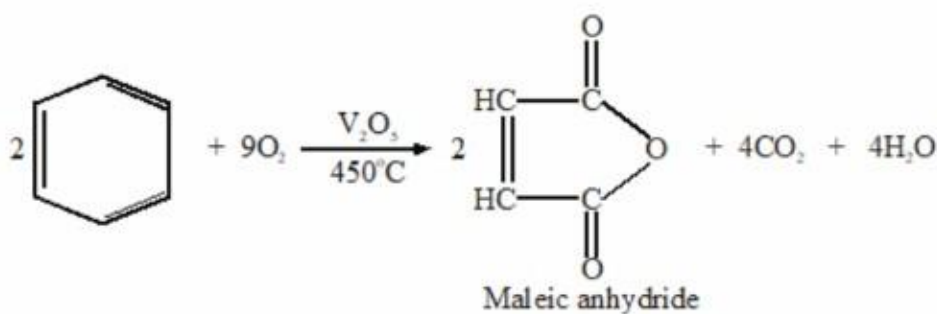


Ni/200°C

V<sub>2</sub>O<sub>5</sub>/450°CAlCl<sub>3</sub>/150°C

Pt/250°C

## Explanation





## QUIZZES

### Practice Test No. 23



5 Questions



5 min

#### Topics

Ortho and para directing groups, Meta directing groups

[Start Quiz](#)



1/5



5 min



Hint

Q : Ortho, para derivatives are obtained by halogenations of



Nitrobenzene



Toluene



Benzaldehyde



Benzene



2/5



5 min



Hint

Q : Amongst the following, the compound that can be most readily sulphonated is



Toluene



Benzene



Nitrobenzene



Chlorobenzene



3/5



5 min



Hint

Q : The example of meta directing group is

 $-\text{OH}$  $-\text{OCH}_3$  $-\text{Br}$  $-\text{COOH}$





4/5



5 min



Hint

Q : Which of following cannot give meta di - substituted product.



Nitrobenzene



Benzoic acid



Aniline



Benzaldehyde



5/5



5 min



Hint

Q : The catalytic hydrogenation of benzene yields



Xylene



Toluene



Benzoic acid



Cyclohexane



Incorrect



1/5

Q : Ortho, para derivatives are obtained by halogenations of

A

Nitrobenzene

B

Toluene

C

Benzaldehyde

D

Benzene

## Explanation

In Toluene methyl group is an ortho para directing group this group release electrons to the benzene ring thereby facilitating the availability of electrons to the electrophiles at ortho and para positions.

This results in the increased chemical reactivity of benzene ring towards electrophiles. The benzene ring can offer more than one positions (ortho and para) to the new incoming groups. These groups are called ortho and para directing groups.



Correct



Unattempted



Incorrect



2/5

Q : Amongst the following, the compound that can be most readily sulphonated is



Toluene



Benzene



Nitrobenzene



Chlorobenzene





Correct



Unattempted



Incorrect



3/5

Q : The example of meta directing group is

 $-\text{OH}$  $-\text{OCH}_3$  $-\text{Br}$  $-\text{COOH}$ 

## Explanation

$-\text{COOH}$  in carboxyl group carbon attached to benzene ring further attach with highly electronegative oxygen atoms which make carbon electron deficient so it will direct upcoming group to meta position.



Correct



Unattempted



Incorrect



4/5

Q : Which of following cannot give meta di - substituted product.



Nitrobenzene



Benzoic acid



Aniline



Benzaldehyde

## Explanation

Amino group is electron donating group substitution group will be at ortho and para position.





Correct



Unattempted



Incorrect



5/5

Q : The catalytic hydrogenation of benzene yields



Xylene



Toluene



Benzoic acid



Cyclohexane





## QUIZZES

### Practice Test No. 24



5 Questions



5 min

#### Topics

COMPARISON OF REACTIVITIES OF ALKANES,  
ALKENES AND BENZENE

[Start Quiz](#)





1/5



5 min



Hint

Q : Benzene is highly stable and does not undergo



Polymerization



Hydroxylation



Elimination



All of the above



2/5



5 min



Hint

Q : Benzene is least reactive then ethene due to



A Three alternate of three double bond in benzene



B Close structure



C  $Sp^2$  hybridization of carbon in benzene ring



D Conjugation in benzene



3/5



5 min



Hint

Q : Which compound is the most reactive one



Benzene



Ethene



Ethane



Ethyne



4/5



5 min



Hint

Q : Which compound is the most reactive one



Benzene



Ethyne



Ethene



Ethane



5/5



5 min



Hint

Q : In the given compounds the least reactive one is



Benzene



Ethene



Ethane



Ethyne



Correct



Unattempted



Incorrect



1/5

Q : Benzene is highly stable and does not undergo



Polymerization



Hydroxylation



Elimination



All of the above





Correct



Unattempted



Incorrect



2/5

Q : Benzene is least reactive than ethene due to



A Three alternate of three double bond in benzene



B Close structure



C  $Sp^2$  hybridization of carbon in benzene ring



D Conjugation in benzene





Correct



Unattempted



Incorrect



3/5

Q : Which compound is the most reactive one



Benzene



Ethene



Ethane



Ethyne







Correct



Unattempted



Incorrect



4/5

Q : Which compound is the most reactive one



Benzene



Ethyne



Ethene



Ethane





Correct



Unattempted



Incorrect



5/5

Q : In the given compounds the least reactive one is



Benzene



Ethene



Ethane



Ethyne

## Explanation

Alkanes are unreactive class of compounds and their unreactivity is due to their non-polar nature and inertness of. But they undergo substitution reaction relatively easily involving free radicals.



## QUIZZES

### Practice Test No. 25



5 Questions



5 min

#### Topics

ALKYL HALIDES, HALOALKANES AND TYPES OF  
ALKYL HALIDES

[Start Quiz](#)



1/5



5 min



Hint

Q : In primary alkyl halides the halogen atom is attached to a carbon which is further attached to how many carbon atoms



Four



Three



Two



One



2/5



5 min



Hint

Q : For which mechanisms, the first step involved is same



E1 and E2

E2 and  $S_N2$  $S_N1$  and E2E1 and  $S_N1$



3/5

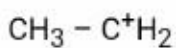
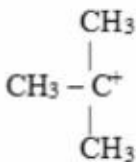
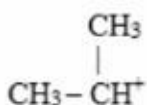


5 min



Hint

Q : Which one of the following carbocation is the most stable carbocation?





4/5



5 min



Hint

Q : \_\_\_\_\_ is derivatives of alkanes are called alkyls halides



Monohalo



Dihalo



Trihalo



All of these



5/5



5 min



Hint

Q : The 2 Chlorobutane is derived from



n-Butane



Isobutane



Methylbutance



2-methylbutane



Q : In primary alkyl halides the halogen atom is attached to a carbon which is further attached to how many carbon atoms

A

Four

B

Three

C

Two

D

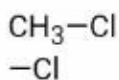
One

## Explanation

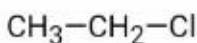
### (i) Primary Alkyl Halides:

In primary alkyl halides, the halogen atom is attached with a carbon which is further attached to one carbon or no carbon atom.

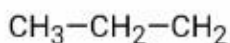
#### Example:



Chloromethane  
Chloropropane



Chloroethane



1-



Correct



Unattempted



Incorrect



2/5

Q : For which mechanisms, the first step involved is same



E1 and E2

E2 and  $S_N2$  $S_N1$  and E2E1 and  $S_N1$ 



Correct



Unattempted

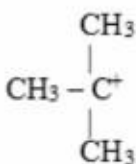
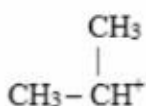


Incorrect



3/5

Q : Which one of the following carbocation is the most stable carbocation?



Explanation



1

2

3

4

5



Incorrect



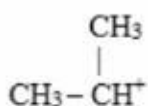
3/5

Q : Which one of the following carbocation is the most stable carbocation?

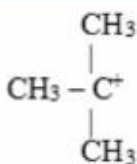
A



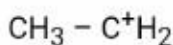
B



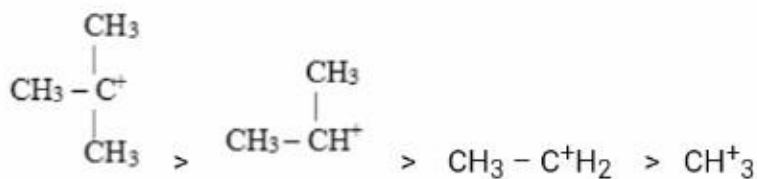
C



D



### Explanation



1

2

3

4

5

Q : \_\_\_\_\_ is derivatives of alkanes are called alkyls halides

A

Monohalo

B

Dihalo

C

Trihalo

D

All of these

## Explanation

### Alkyl Halides:

Mono-halo-alkanes are called alkyl halides.

### General Formula:

The general formula is  $RX$  where  $-R$  may be methyl, ethyl, propyl etc. while  $X$  represents halogen atom (F, Cl, Br, I).

### Classification of Alkyl Halides:

Alkyl halides are classified on the basis of nature of carbon atom to which halogen atom is attached.

#### (i) Primary Alkyl Halides:

In primary alkyl halides, the halogen atom is attached with a carbon which is further attached to one carbon or no carbon atom.

D

All of these

## Explanation

### Alkyl Halides:

Mono-halo-alkanes are called alkyl halides.

### General Formula:

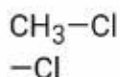
The general formula is  $RX$  where  $-R$  may be methyl, ethyl, propyl etc. while  $X$  represents halogen atom (F, Cl, Br, I).

### Classification of Alkyl Halides:

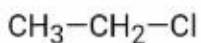
Alkyl halides are classified on the basis of nature of carbon atom to which halogen atom is attached.

#### (i) Primary Alkyl Halides:

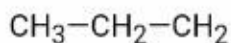
In primary alkyl halides, the halogen atom is attached with a carbon which is further attached to one carbon or no carbon atom.



Chloromethane  
Chloropropane



Chloroethane



1-

#### (ii) Secondary Alkyl Halides:

In secondary alkyl halides, the halogen atom is attached with a carbon which is further attached to two carbon atoms.

In tertiary alkyl halides, the halogen atom is attached with a carbon which is further attached to three carbon atoms.



Correct



Unattempted



Incorrect



5/5

Q : The 2 Chlorobutane is derived from



n-Butane



Isobutane



Methylbutance



2-methylbutane

## Explanation

1 hydrogen from butane is replaced by chlorine then it is called chloro butane.





## QUIZZES

### Practice Test No. 26



5 Questions



5 min

#### Topics

NOMENCLATURE OF ALKYL HALIDE, Common  
names

[Start Quiz](#)





1/5



5 min



Hint

Q : The correct name of  $\text{CH}_3\text{Cl}$  is



Methyl chloride



Methylene chloride



Chloroform



Carbon dichloride



2/5



5 min

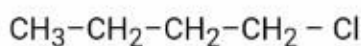


Hint

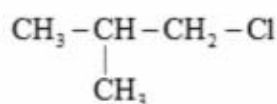
Q :

Which of following is correct structure of isobutyl chloride

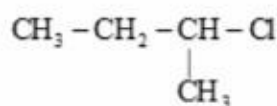
A



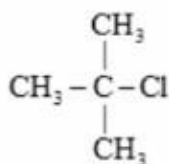
B



C



D





3/5



5 min



Hint

Q : The formula of tetrabromomethane is

 $\text{CCl}_4$  $\text{CBr}_4$  $(\text{CH}_3)_2\text{CHBr}$  $\text{CH}_2\text{Br}_2$



4/5



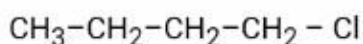
5 min



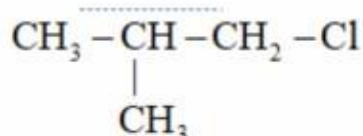
Hint

Q : Which of following is correct structure of isobutyl chloride

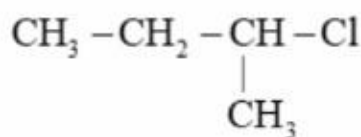
A



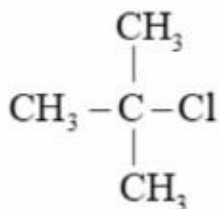
B



C



D





5/5



5 min



Hint

Q : The formula of tetrabromomethane is

 $\text{CCl}_4$  $\text{CBr}_4$  $(\text{CH}_3)_2\text{CHBr}$  $\text{CH}_2\text{Br}_2$



Correct



Unattempted



Incorrect



1/5

Q : The correct name of  $\text{CH}_3\text{Cl}$  is



Methyl chloride



Methylene chloride



Chloroform



Carbon dichloride





Correct



Unattempted



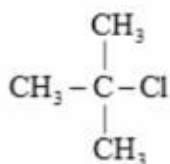
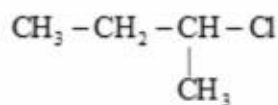
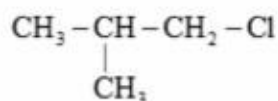
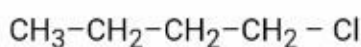
Incorrect



2/5

Q:

Which of following is correct structure of isobutyl chloride





Correct



Unattempted



Incorrect



3/5

Q : The formula of tetrabromomethane is

 $\text{CCl}_4$  $\text{CBr}_4$  $(\text{CH}_3)_2\text{CHBr}$  $\text{CH}_2\text{Br}_2$ 





Correct



Unattempted

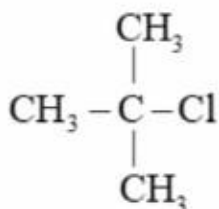
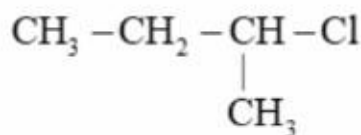
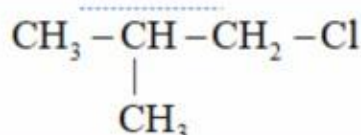
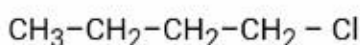


Incorrect



4/5

Q : Which of following is correct structure of isobutyl chloride





Correct



Unattempted



Incorrect



5/5

Q : The formula of tetrabromomethane is

 $\text{CCl}_4$  $\text{CBr}_4$  $(\text{CH}_3)_2\text{CHBr}$  $\text{CH}_2\text{Br}_2$



## QUIZZES

### Practice Test No. 27



5 Questions



5 min

#### Topics

METHODS OF PREPARATION OF ALKYL HALIDES

[Start Quiz](#)



1/5



5 min



Hint

Q : Alkyl halides are prepared by reacting alcohols with

 $\text{S}_2\text{Cl}_2$  $\text{ZnCl}_2$  $\text{PCl}_3$  $\text{PbCl}_2$



2/5



5 min



Hint

Q : Which of the following cannot be obtained by the direct combination of alkane with  $X_2$



R-Cl



R-Br



R-I



All can be prepared



3/5



5 min



Hint

Q : Alkyl halides are prepared by reacting alcohols with



A  $\text{SOCl}_2$ /Pyridine



B  $\text{ZnCl}_2/\text{HX}$



C  $\text{PCl}_3$



D All



4/5



5 min



Hint

Q : Which of the following cannot be obtained by the direct combination of alkane with  $X_2$



R-Cl



R-Br



R-I



All can be prepared



5/5



5 min



Hint

Q : Ethene reacts with halogen acids to form alkyl halide. The process is known as



Halogenation



Hydrohalogenation



Hydrogenation



Dehydrohalogenation





Correct



Unattempted



Incorrect

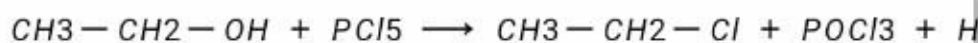


1/5

Q : Alkyl halides are prepared by reacting alcohols with

 $S_2Cl_2$  $ZnCl_2$  $PCl_3$  $PbCl_2$ 

### Explanation





Incorrect



2/5

Q : Which of the following cannot be obtained by the direct combination of alkane with  $X_2$



R-Cl



R-Br



R-I

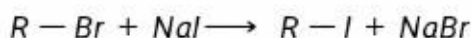


All can be prepared

## Explanation

### Preparation of Alkyl iodides:

Alkyl iodides cannot be prepared by the direct iodination of alkanes. So, an excellent method for the preparation of simple alkyl iodide is the treatment of alkyl chloride or alkyl bromide with sodium iodide.





Correct



Unattempted



Incorrect



3/5

Q : Alkyl halides are prepared by reacting alcohols with

 $\text{SOCl}_2$ /Pyridine $\text{ZnCl}_2$ /HX $\text{PCl}_3$ 

All





Correct



Unattempted



Incorrect



4/5

Q : Which of the following cannot be obtained by the direct combination of alkane with  $X_2$



R-Cl



R-Br



R-I



All can be prepared



Correct



Unattempted



Incorrect



5/5

Q : Ethene reacts with halogen acids to form alkyl halide. The process is known as



Halogenation



Hydrohalogenation



Hydrogenation



Dehydrohalogenation





## QUIZZES

### Practice Test No. 28



5 Questions



5 min

#### Topics

REACTIVITY OF ALKYL HALIDES, Reactivity,  
order on basis on bond energy, Reactivity,  
order on basis on bond polarity

[Start Quiz](#)



1/5



5 min



Hint

Q : Which of the following is most reactive?

 $\text{C}_2\text{H}_5\text{-F}$  $\text{C}_2\text{H}_5\text{-Cl}$  $\text{C}_2\text{H}_5\text{-Br}$  $\text{C}_2\text{H}_5\text{-I}$



2/5



5 min



Hint

Q : The alkyl halide which has lowest bond energy is



R - F



R - Cl



R - Br



R - I





3/5



5 min



Hint

Q : In  $\beta$  – elimination reaction, nucleophile attacks on

 $\alpha$ -hydrogen $\beta$ -hydrogen $\gamma$ -hydrogen

None of these



4/5



5 min



Hint

Q :  $\text{CH}_3\text{CH}_2\text{Br} + \text{CH}_3\text{O}^- \longrightarrow \text{Product-I} + \text{Product-II}$

The product-I and II are respectively



$\text{CH}_3\text{CH}_2\text{OCH}_3 + \text{OH}^-$



$\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$  and  $\text{Br}^-$



$\text{CH}_3\text{OCH}_3 + \text{Br}^-$



$\text{CH}_3\text{CH}_2\text{OCH}_3$  and  $\text{Br}^-$



5/5



5 min



Hint

Q : The bond energy of C-Br is

467 kJmol<sup>-1</sup>413 kJmol<sup>-1</sup>346 kJmol<sup>-1</sup>290 kJmol<sup>-1</sup>



Correct



Unattempted



Incorrect



1/5

Q : Which of the following is most reactive?

 $\text{C}_2\text{H}_5\text{-F}$  $\text{C}_2\text{H}_5\text{-Cl}$  $\text{C}_2\text{H}_5\text{-Br}$  $\text{C}_2\text{H}_5\text{-I}$ 



Correct



Unattempted



Incorrect



2/5

Q : The alkyl halide which has lowest bond energy is



R - F



R - Cl



R - Br



R - I





Correct



Unattempted



Incorrect



3/5

Q : In  $\beta$  - elimination reaction, nucleophile attacks on

 $\alpha$ -hydrogen $\beta$ -hydrogen $\gamma$ -hydrogen

None of these





Correct



Unattempted



Incorrect



4/5

Q :  $\text{CH}_3\text{CH}_2\text{Br} + \text{CH}_3\text{O}^- \longrightarrow \text{Product-I} + \text{Product-II}$

The product-I and II are respectively

 $\text{CH}_3\text{CH}_2\text{OCH}_3 + \text{OH}^-$  $\text{CH}_3\text{CH}_2\text{OCH}_2\text{CH}_3$  and  $\text{Br}^-$  $\text{CH}_3\text{OCH}_3 + \text{Br}^-$  $\text{CH}_3\text{CH}_2\text{OCH}_3$  and  $\text{Br}^-$ 



Incorrect



5/5

Q : The bond energy of C—Br is

A

467 kJmol<sup>-1</sup>

B

413 kJmol<sup>-1</sup>

C

346 kJmol<sup>-1</sup>

D

290 kJmol<sup>-1</sup>

## Explanation

Bond	Bond energy (kJ/mole)
C—F	467
C—H	413
C—Cl	346
C—Br	290
C—I	228





## QUIZZES

### Practice Test No. 29



5 Questions



5 min

#### Topics

REACTIONS OF ALKYL HALIDES, Reactions of alkyl halides, Nucleophiles, Electrophiles, Leaving group and substrate

[Start Quiz](#)



1/5



5 min



Hint

Q : Which of the following is single step mechanism



E1 and E2

 $S_N1$  and  $S_N2$ E1 and  $S_N1$ E2 and  $S_N2$



2/5



5 min



Hint

Q : The RX molecule on which a nucleophile attacks is called



Attacking nucleophile



Leaving group



Substrate



Base



3/5



5 min



Hint

Q : Chloroethane can be reduced with zinc in the presence of an aqueous acid such as HCl or  $\text{CH}_3\text{COOH}$  into



Propane



Methane



Ethane



n-Butane



4/5



5 min



Hint

Q : Electrophile among the following is

 $\text{NH}_3$  $\text{H}_2\text{O}$  $\text{BF}_3$  $\text{Cl}_2$



5/5



5 min



Hint

Q : Which one of the following is best nucleophile?

 $\text{H}_2\text{O}$  $\text{NH}_3$  $\text{C}_2\text{H}_5\text{O}^-$ 

NO



Correct



Unattempted



Incorrect



1/5

Q : Which of the following is single step mechanism



E1 and E2

 $S_N1$  and  $S_N2$ E1 and  $S_N1$ E2 and  $S_N2$ 



Correct



Unattempted



Incorrect



2/5

Q : The RX molecule on which a nucleophile attacks is called



A Attacking nucleophile



B Leaving group



C Substrate



D Base







Correct



Unattempted



Incorrect



3/5

Q : Chloroethane can be reduced with zinc in the presence of an aqueous acid such as HCl or  $\text{CH}_3\text{COOH}$  into



Propane



Methane



Ethane



n-Butane





Correct



Unattempted



Incorrect



4/5

Q : Electrophile among the following is

 $\text{NH}_3$  $\text{H}_2\text{O}$  $\text{BF}_3$  $\text{Cl}_2$ 

## Explanation

Boron is electron deficient in  $\text{BF}_3$  which make it electrophile





Correct



Unattempted



Incorrect



5/5

Q : Which one of the following is best nucleophile?

 $\text{H}_2\text{O}$  $\text{NH}_3$  $\text{C}_2\text{H}_5\text{O}^-$ 

NO

## Explanation

Oxygen carry negative charge and alkyl group attach with oxygen is electron donating group which enhance nucleophilic reactant



## QUIZZES

### Practice Test No. 30



5 Questions



5 min

#### Topics

Nucleophilic substitution bimolecular reactions, Nucleophilic substitution unimolecular reactions, Beta elimination bimolecular reactions, Beta elimination unimolecular reactions

**Start Quiz**



1/5



5 min



Hint

Q : Primary alkyl halides always follow



$S_N1$  mechanism



$S_N2$  mechanism



E1 mechanism



All



2/5



5 min



Hint

Q : 50% inversion of molecules take place in a



E1 reaction



E2 reaction

 $S_N1$  reaction $S_N2$  reaction



3/5



5 min



Hint

Q : Dehydrohalogenation of  $\text{CH}_3\text{-CH}_2\text{-Cl}$  gives



Ethane



Ethene



Ethyne



None of these



4/5



5 min



Hint

Q :  $S_N2$  reactions can be best carried out with



Primary alkyl halides



Secondary alkyl halides



Tertiary alkyl halides



All of these





5/5



5 min



Hint

Q : The rate of E1 reaction depends upon



The concentration of substrate



The concentration of nucleophile



The concentration of substrate as well as nucleophile



None of the above



Correct



Unattempted



Incorrect



1/5

Q : Primary alkyl halides always follow

 $S_N1$  mechanism $S_N2$  mechanism

E1 mechanism



All

## Explanation

- Primary alkyl halides give this reaction.

As soon as the nucleophile starts attacking the electrophilic carbon of the substrate, the bond with which the leaving group is attached, starts breaking. In other words, the extent of bond formation is equal to the extent of bond breakage. This is called transition state.

Q : 50% inversion of molecules take place in a

A

E1 reaction

B

E2 reaction

C

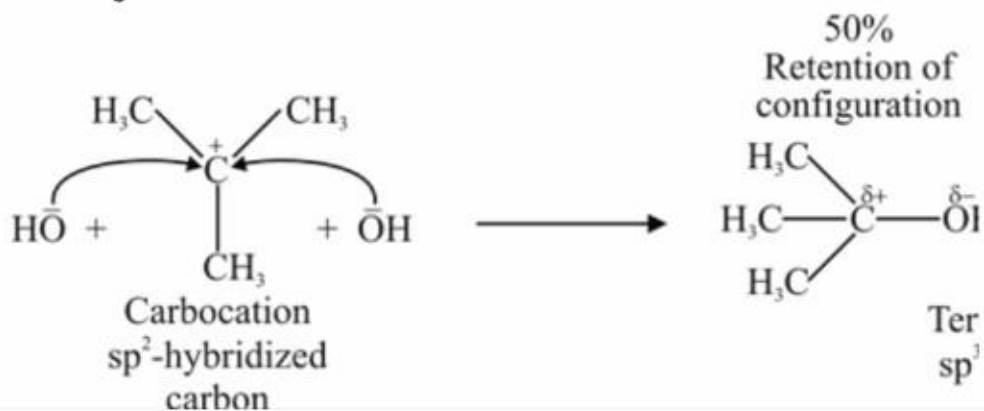
 $S_N1$  reaction

D

 $S_N2$  reaction

## Explanation

The intermediate carbocation is a planar specie allowing the nucleophile to attack on it from both the directions with equal ease. Therefore, there is 50% inversion of configuration and 50% retention of configuration.





Q : 50% inversion of molecules take place in a

A

E1 reaction

B

E2 reaction

C

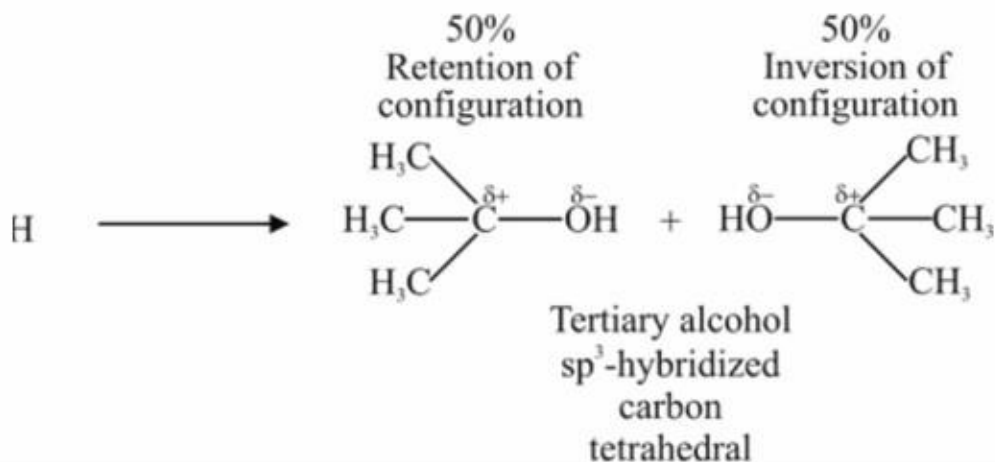
**S<sub>N</sub>1 reaction**

D

S<sub>N</sub>2 reaction

## Explanation

It is a planar species allowing the approach from both the directions with equal ease. This results in 50% inversion of configuration and 50% retention.





Correct



Unattempted



Incorrect



3/5

Q : Dehydrohalogenation of  $\text{CH}_3\text{-CH}_2\text{-Cl}$  gives



Ethane



Ethene



Ethyne



None of these

## Explanation

### Dehydrohalogenation of Alkyl Halides

Removal of a halogen atom and hydrogen atom from adjacent carbon atoms is called **dehydrohalogenation**. Since hydrogen is removed from  $\beta$ -Carbon, this reaction is also called  **$\beta$ -elimination** reaction.



Correct



Unattempted



Incorrect



4/5

Q :  $S_N2$  reactions can be best carried out with



Primary alkyl halides



Secondary alkyl halides



Tertiary alkyl halides



All of these

## Explanation

Among the alkyl halides, the primary alkyl halides always follow  $S_N2$  mechanism whenever they are attacked by nucleophiles.





Correct



Unattempted



Incorrect



5/5

Q : The rate of E1 reaction depends upon



The concentration of substrate



The concentration of nucleophile



The concentration of substrate as well as nucleophile



None of the above

## Explanation

### Rate of reaction:

Kinetic studies of the reactions involving E1 mechanism have shown that the rates of such reactions depend upon the concentration of alkyl halide only. Mathematically, the rate can be expressed as:

$$\text{Rate} = k [\text{alkyl halide}]^1$$





## QUIZZES

### Practice Test No. 31



5 Questions



5 min

#### Topics

GRIGNARD REAGENT, Formation and preparation, Structure and reactivity, Reactions - I, Reactions - II

[Start Quiz](#)





1/5



5 min



Hint

Q : Grignard's reagent is prepared by the reaction of Mg metal with R - X in the presence of



Alcoholic ether



Dry ether



Hydrated ether



Acidified ether



2/5



5 min



Hint

Q : Grignard's reagent reacts with formaldehyde to give followed by hydrolysis



Primary alcohol



Secondary alcohol



Tertiary alcohol



Carboxylic acid



3/5



5 min



Hint

Q : Which one of the alkyl halide is not used for the preparation of Grignard's reagent



R - F



R - Cl



R - Br



R - I



4/5



5 min



Hint

Q :  $\text{CH}_3\text{CH}_2\text{MgX} + \text{CO}_2 \xrightarrow{\text{H}_2\text{O}} \text{A} + \text{Mg Br OH}$  'A' is

 $\text{CH}_3\text{CH}_2\text{COOH}$  $\text{CH}_3\text{CH}_2\text{CH}_3$  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$  $\text{CH}_3\text{CH}_3$



5/5



5 min



Hint

Q : Grignard's reagent is reactive due to



A The presence of halogen atom



B The presence of Mg atom



C The polarity of C-Mg bond



D The polarity of Mg-X bond



Correct



Unattempted



Incorrect



1/5

Q : Grignard's reagent is prepared by the reaction of Mg metal with R - X in the presence of



Alcoholic ether



Dry ether



Hydrated ether



Acidified ether





Correct



Unattempted



Incorrect



2/5

Q : Grignard's reagent reacts with formaldehyde to give followed by hydrolysis



Primary alcohol



Secondary alcohol



Tertiary alcohol



Carboxylic acid



Correct



Unattempted



Incorrect



3/5

Q : Which one of the alkyl halide is not used for the preparation of Grignard's reagent



R - F



R - Cl



R - Br



R - I







Correct



Unattempted



Incorrect



4/5

Q :  $\text{CH}_3\text{CH}_2\text{MgX} + \text{CO}_2 \xrightarrow{\text{H}_2\text{O}^+} \text{A} + \text{Mg Br OH}$  'A' is

 $\text{CH}_3\text{CH}_2\text{COOH}$  $\text{CH}_3\text{CH}_2\text{CH}_3$  $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3$  $\text{CH}_3\text{CH}_3$ 



Correct



Unattempted



Incorrect



5/5

Q : Grignard's reagent is reactive due to



The presence of halogen atom



The presence of Mg atom



The polarity of C-Mg bond



The polarity of Mg-X bond





## QUIZZES

### Practice Test No. 32



3 Questions



5 min

#### Topics

INTRODUCTION OF ALCOHOLS, PHENOLS AND  
ETHERS

[Start Quiz](#)



1/3



5 min



Hint

Q : Which one of the following is not derivative of water

 $\text{CH}_3\text{OH}$  $\text{C}_2\text{H}_5\text{OH}$  $\text{C}_6\text{H}_5\text{OH}$  $\text{CH}_3\text{-CH}_2\text{-CH}_3$



2/3



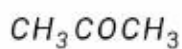
5 min



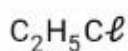
Hint

Q : Select which of the following is an alcohol

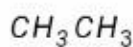
A



B



C



D





3/3



5 min



Hint

Q : Which one of the following compound does not have -OH group.



Ethylene Glycol



Glycerol



Picric acid



Ethyl acetate



Correct



Unattempted



Incorrect



1/3

Q : Which one of the following is not derivative of water

 $\text{CH}_3\text{OH}$  $\text{C}_2\text{H}_5\text{OH}$  $\text{C}_6\text{H}_5\text{OH}$  $\text{CH}_3\text{-CH}_2\text{-CH}_3$ 



Correct



Unattempted

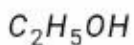
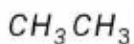
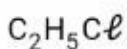
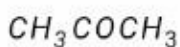


Incorrect



2/3

Q : Select which of the following is an alcohol







Correct



Unattempted



Incorrect



3/3

Q : Which one of the following compound does not have -OH group.



Ethylene Glycol



Glycerol



Picric acid



Ethyl acetate





## QUIZZES

### Practice Test 33



5 Questions



5 min

#### Topics

Nomenclature of alcohols, Industrial preparation of methanol, Industrial preparation of ethanol, Physical properties

[Start Quiz](#)



1/5



5 min



Hint

Q : The maximum % age of alcohol which can be prepared by fermentation process is



8%



14%



90%



95%



2/5



5 min



Hint

Q : Rectified spirit contains alcohol about



80%



85%



90%



95%



3/5



5 min



Hint

Q : Which compound shows maximum hydrogen bonding with water?

 $\text{C}_3\text{H}_7\text{OH}$  $\text{C}_2\text{H}_5\text{OH}$  $\text{CH}_3\text{-O-CH}_3$  $\text{C}_6\text{H}_5\text{OH}$



4/5



5 min



Hint

Q : Aromatic Alcohol among the following is



Phenol



Acetophenone



Benzyl alcohol



Diethyl ether



5/5



5 min



Hint

Q : All methods are for preparation of alcohols except



Fermentation



Hydration of alkene



Grignard's reagent



Williamson's synthesisd



Correct



Unattempted



Incorrect



1/5

Q : The maximum % age of alcohol which can be prepared by fermentation process is



8%



14%



90%



95%

## Explanation

Alcohol obtained by fermentation is upto 12% and never exceed 14% because beyond this limit, the enzymes become inactive.





Correct



Unattempted



Incorrect



2/5

Q : Rectified spirit contains alcohol about



80%



85%



90%



95%

## Explanation

### Rectified Spirit:

95% ethyl alcohol is called rectified spirit or commercial alcohol.





Correct



Unattempted



Incorrect



3/5

Q : Which compound shows maximum hydrogen bonding with water?

 $\text{C}_3\text{H}_7\text{OH}$  $\text{C}_2\text{H}_5\text{OH}$  $\text{CH}_3\text{-O-CH}_3$  $\text{C}_6\text{H}_5\text{OH}$ 



Correct



Unattempted



Incorrect



4/5

Q : Aromatic Alcohol among the following is



Phenol



Acetophenone



Benzyl alcohol



Diethyl ether





Incorrect



5/5

Q : All methods are for preparation of alcohols except



Fermentation



Hydration of alkene



Grignard's reagent



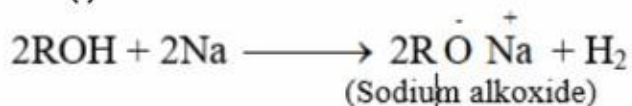
Williamson's synthesis

## Explanation

### (1) Williamsons Synthesis

It is a two step reaction.

(i) Alcohol reacts with metallic sodium to form alkoxide.





## QUIZZES

### Practice Test 34



5 Questions



5 min

#### Topics

Reactions in which C – O bond is broken,  
Oxidation reactions

[Start Quiz](#)



1/5



5 min



Hint

Q : Most reactive alcohol when it reacts with Na



Methanol



Propanol



Ethanol



Butanol



2/5



5 min



Hint

Q : For the reaction of alcohol in which O-H bond cleavage is involved, the order of reactivity is:



A Primary alcohol > Secondary alcohol > Tertiary alcohol



B Primary alcohol > Tertiary alcohol > Secondary alcohol



C Tertiary alcohol > Secondary alcohol > Primary alcohol



D Secondary alcohol > Tertiary alcohol > Primary alcohol



3/5



5 min



Hint

Q : Dehydration products of alcohols are



Alkanes



Alkenes



Alkynes



Aldehydes





4/5



5 min



Hint

Q : Oxidation of primary alcohols in the presence of  $K_2Cr_2O_7$  produces



Aldehydes



Ketones



Carboxylic acids



Ethers



5/5



5 min



Hint

Q : Ethanol can be converted into ethanoic acid by



A Hydration



B Fermentation



C Hydrogenation



D None of these



Incorrect



1/5

Q : Most reactive alcohol when it reacts with Na



Methanol



Propanol



Ethanol



Butanol

## Explanation

When sodium reacted with alcohol then its O-H bond will be broken

**When O – H bond breaks:**

$\text{CH}_3\text{OH} > \text{Primary alcohol} > \text{Secondary alcohol} > \text{tertiary alcohol}$

This order of reactivity is based upon the stability of alkoxide ion (intermediate) formed during the reaction.



Incorrect



2/5

Q : For the reaction of alcohol in which O-H bond cleavage is involved, the order of reactivity is:



Primary alcohol &gt; Secondary alcohol &gt; Tertiary alcohol



Primary alcohol &gt; Tertiary alcohol &gt; Secondary alcohol



Tertiary alcohol &gt; Secondary alcohol &gt; Primary alcohol



Secondary alcohol &gt; Tertiary alcohol &gt; Primary alcohol

## Explanation

**When O – H bond breaks:**

$\text{CH}_3\text{OH} > \text{Primary alcohol} > \text{Secondary alcohol} > \text{tertiary alcohol}$

This order of reactivity is based upon the stability of alkoxide ion (intermediate) formed during the reaction.



Correct



Unattempted



Incorrect



3/5

Q : Dehydration products of alcohols are



Alkanes



Alkenes

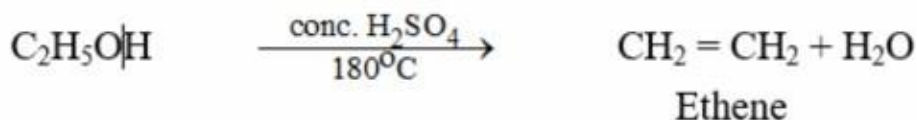


Alkynes



Aldehydes

## Explanation





Correct



Unattempted



Incorrect



4/5

Q : Oxidation of primary alcohols in the presence of  $K_2Cr_2O_7$  produces



Aldehydes



Ketones

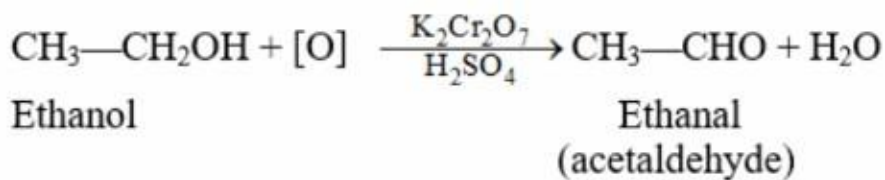


Carboxylic acids



Ethers

### Explanation





Correct



Unattempted



Incorrect



5/5

Q : Ethanol can be converted into ethanoic acid by



Hydration



Fermentation



Hydrogenation



None of these

## Explanation

Ethanol can be converted into ethanoic acid by oxidation







## QUIZZES

### Practice Test 35



5 Questions



5 min

#### Topics

DISTINCTION BETWEEN PRIMARY, SECONDARY,  
AND TERTIARY ALCOHOLS, USES OF ALCOHOLS,  
Lucas Test

**Start Quiz**





1/5



5 min



Hint

Q : Which of the following compound will give Iodoform test?



Ether



Phenol



Ethanol



Ethylene glycol



2/5



5 min



Hint

Q : Methyl alcohol is not used as:



A solvent



An anti – freezing agent



A substitute for petrol



In denaturing of alcohol



3/5



5 min



Hint

Q : Methyl alcohol is not used as:



A solvent



An anti – freezing agent



A substitute for petrol



In denaturing of alcohol



4/5



5 min



Hint

Q : Primary, secondary and tertiary alcohols can be distinguished by



Benedict's solution



Lucas test



Fehling's solution



Ammonical silver nitrate (Tollen's reagent)



5/5



5 min



Hint

Q : Which substance is used as denaturing of alcohol.



Methanol



Ethanol



Acetone



Acetic acid



Correct



Unattempted



Incorrect



1/5

Q : Which of the following compound will give Iodoform test?



Ether



Phenol



Ethanol



Ethylene glycol



Incorrect



2/5

Q : Methyl alcohol is not used as:



A solvent



An anti – freezing agent



A substitute for petrol



In denaturing of alcohol

## Explanation

### Uses of Methanol:

Methanol is used

- (i) As a solvent for fats, oils, paints and varnishes.
- (ii) As antifreeze in radiators of automobiles.
- (iii) For denaturing of alcohol as it is very poisonous.



Correct



Unattempted



Incorrect



3/5

Q : Methyl alcohol is not used as:



A solvent



An anti – freezing agent



A substitute for petrol



In denaturing of alcohol





Correct



Unattempted



Incorrect



4/5

Q : Primary, secondary and tertiary alcohols can be distinguished by



Benedict's solution



Lucas test



Fehling's solution



Ammonical silver nitrate (Tollen's reagent)





Incorrect



5/5

Q : Which substance is used as denaturing of alcohol.



Methanol



Ethanol



Acetone



Acetic acid

## Explanation

### Uses of Methanol:

Methanol is used

- (i) As a solvent for fats, oils, paints and varnishes.
- (ii) As antifreeze in radiators of automobiles.
- (iii) For denaturing of alcohol as it is very poisonous.



## QUIZZES

### Practice Test 36



5 Questions



5 min

#### Topics

PHENOL, Preparation of phenol, Physical properties

[Start Quiz](#)



1/5



5 min



Hint

Q : Phenol was isolated by Runge from



Vegetable oil



Coal tar



Wood



None of these



2/5



5 min



Hint

Q : When Chloro-benzene is treated with 10% NaOH at  $360^{\circ}\text{C}$  and 150 atm pressure.



Phenol



Sodium Ethoxide



Toluene



Benzene



3/5



5 min



Hint

Q : Phenol at room temperature has a physical state



Gas



Liquid



Solid



Both b &amp; c



4/5



5 min



Hint

Q : Melting point of Phenol is



41 K



314 K



298 K



400 K



5/5



5 min



Hint

Q : Preparation of benzene by using Phenol and Zn is an example of



Oxidation



Reduction



Neutralization



Disproportionation





Correct



Unattempted



Incorrect



1/5

Q : Phenol was isolated by Runge from



Vegetable oil



Coal tar



Wood



None of these



Correct



Unattempted



Incorrect



2/5

Q : When Chloro-benzene is treated with 10% NaOH at  $360^{\circ}\text{C}$  and 150 atm pressure.



Phenol



Sodium Ethoxide



Toluene



Benzene

## Explanation

When Chloro-benzene is treated with 10% NaOH at  $360^{\circ}\text{C}$  and 150 atm pressure sodium phenoxide is produced.



Correct



Unattempted



Incorrect



3/5

Q : Phenol at room temperature has a physical state



Gas



Liquid



Solid



Both b &amp; c

## Explanation

Melting point of phenol is  $41^{\circ}\text{C}$



Correct



Unattempted



Incorrect



4/5

Q : Melting point of Phenol is



41 K



314 K



298 K



400 K

## Explanation

Melting point of phenol  $41^{\circ}\text{C}$



Correct



Unattempted



Incorrect



5/5

Q : Preparation of benzene by using Phenol and Zn is an example of



Oxidation



Reduction



Neutralization



Disproportionation





**USAMA SOHAIL**



**SAEED MDCAT**

SAEED MDCAT TEAM





## QUIZZES

### Practice Test 37



5 Questions



5 min

#### Topics

Reactions of phenol, Acidic behaviour of phenol, Reactions of phenol due to OH group, Reactions of phenol due to benzene ring

**Start Quiz**



1/5



5 min



Hint

Q : Phenol when reacts with Zn dust, produces



Acetylene



Aniline



Toluene



Benzene





2/5



5 min



Hint

Q : Hydrogenation of phenol is example of ----- reaction



Substitution



Elimination

**Addition**

Polymerization



3/5



5 min



Hint

Q : Phenol Reacts with  $\text{CH}_3\text{COCl}$  to give:



Acid



Alcohol



Aldehyde



Ester



4/5



5 min



Hint

Q : Which of the following is stronger acid



Phenol



Benzoic acid



Ethyl alcohol



Water



5/5



5 min



Hint

Q : Preparation of benzene by using Phenol and Zn is an example of:



Oxidation



Reduction



Neutralization



Disproportionation



Incorrect



1/5

Q : Phenol when reacts with Zn dust, produces



Acetylene



Aniline

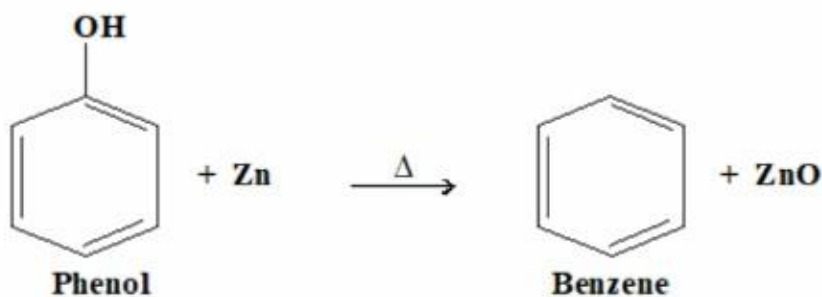


Toluene



Benzene

## Explanation





Correct



Unattempted



Incorrect



2/5

Q : Hydrogenation of phenol is example of ----- reaction



Substitution



Elimination

**Addition**

Polymerization





Incorrect



3/5

Q : Phenol Reacts with  $\text{CH}_3\text{COCl}$  to give:

A

Acid

B

Alcohol

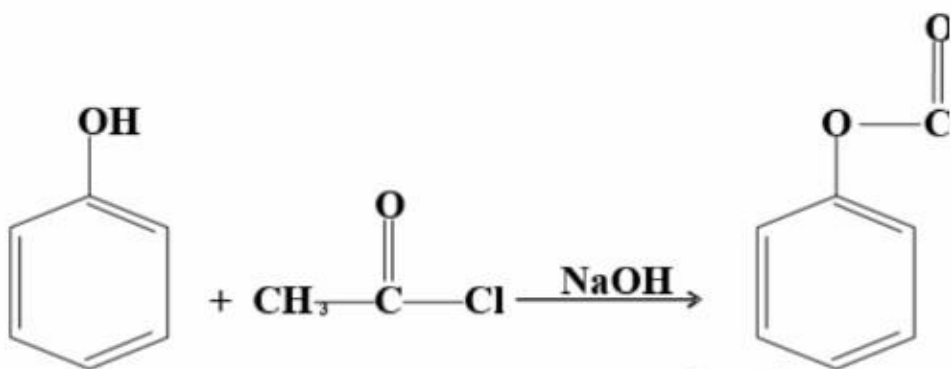
C

Aldehyde

D

Ester

## Explanation



Phenyl acetate

1

2

3

4

5





Correct



Unattempted



Incorrect



4/5

Q : Which of the following is stronger acid



Phenol



Benzoic acid



Ethyl alcohol



Water

## Explanation

The stronger acid among than benzoic acid





Incorrect



5/5

Q : Preparation of benzene by using Phenol and Zn is an example of:

A

Oxidation

B

Reduction

C

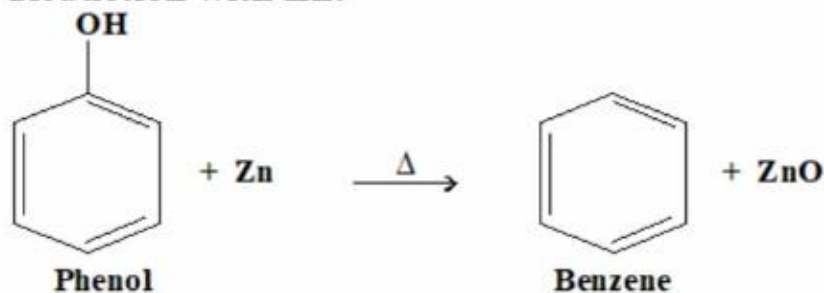
Neutralization

D

Disproportionation

## Explanation

**Reduction with Zn:**





## QUIZZES

### Practice Test 38



5 Questions



5 min

#### Topics

ETHERS, Physical properties, Chemical reactivity

[Start Quiz](#)



1/5



5 min



Hint

Q : Diethyl ether on heating with conc. HI gives



Ethyl iodide



Ethanol



Iodoform



Both a and b



2/5



5 min



Hint

Q : According to Lewis concept ether behave as



Acid



Base



Acid as well as a base



None of them



3/5



5 min



Hint

Q : Which compound will have the maximum repulsion with  $H_2O$ ?

 $C_6H_6$  $C_2H_5OH$  $CH_3CH_2CH_2OH$  $CH_3 - O - CH_3$



4/5



5 min



Hint

Q : Ethers show the phenomenon of



Position isomerism



Metamerism



Functional group isomerism



Cis-trans isomerism



5/5



5 min



Hint

Q : Ethers show functional group isomerism with



Aldehydes



Ketones



Alcohols



Carboxylic acids



Correct



Unattempted



Incorrect



1/5

Q : Diethyl ether on heating with conc. HI gives



Ethyl iodide



Ethanol



Iodoform



Both a and b







Correct



Unattempted



Incorrect



2/5

Q : According to Lewis concept ether behave as



Acid



Base



Acid as well as a base



None of them





Correct



Unattempted



Incorrect



3/5

Q : Which compound will have the maximum repulsion with  $\text{H}_2\text{O}$ ?

 $\text{C}_6\text{H}_6$  $\text{C}_2\text{H}_5\text{OH}$  $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$  $\text{CH}_3 - \text{O} - \text{CH}_3$



Correct



Unattempted



Incorrect



4/5

Q : Ethers show the phenomenon of



Position isomerism



Metamerism



Functional group isomerism



Cis-trans isomerism





Correct



Unattempted



Incorrect



5/5

Q : Ethers show functional group isomerism with



Aldehydes



Ketones



Alcohols



Carboxylic acids

## Explanation

Both have same molecular formula but different structure due to different functional group.





## QUIZZES

### Practice Test 39



5 Questions



5 min

#### Topics

INTRODUCTION OF ALDEHYDE AND KETONES,  
Nomenclature of aldehydes, Nomenclature  
of ketones

[Start Quiz](#)



1/5



5 min



Hint

Q : The functional group present in most of the sugars.



Ketonic group



Carboxylic group



Aldehydic group



All



2/5



5 min



Hint

Q : Aldehydes are colourless liquids except



Acetaldehyde



Formaldehyde



Propionaldehyde



Butyraldehyde



3/5



5 min



Hint

Q : Organic compounds containing \_\_\_\_\_ are called aldehydes and ketones



A Carbonyl functional group



B Hydroxyl functional group



C Carboxyl functional group



D All of the above





4/5



5 min



Hint

Q : The common names of aldehydes are obtained from the names of carboxylic acid containing same number of



Carbon atoms



Hydrogen atom



Oxygen atoms



Carbon and hydrogen atoms



5/5



5 min



Hint

Q : Which of the following is a symmetrical ketone



3- hexanone



Acetone



Butanone



2- pentanone



Correct



Unattempted



Incorrect



1/5

Q : The functional group present in most of the sugars.



Ketonic group



Carboxylic group



Aldehydic group



All





Correct



Unattempted



Incorrect



2/5

Q : Aldehydes are colourless liquids except



Acetaldehyde



Formaldehyde



Propionaldehyde



Butyraldehyde



Correct



Unattempted



Incorrect



3/5

Q : Organic compounds containing \_\_\_\_\_ are called aldehydes and ketones



Carbonyl functional group



Hydroxyl functional group



Carboxyl functional group



All of the above



Correct



Unattempted



Incorrect



4/5

Q : The common names of aldehydes are obtained from the names of carboxylic acid containing same number of



Carbon atoms



Hydrogen atom



Oxygen atoms



Carbon and hydrogen atoms

## Explanation

The common names of aldehydes are obtained from the names of carboxylic acid containing same number of carbon atoms





Incorrect



5/5

Q : Which of the following is a symmetrical ketone

A

3- hexanone

B

Acetone

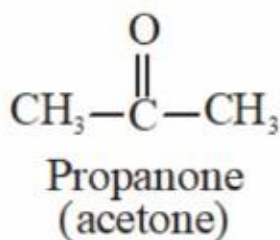
C

Butanone

D

2- pentanone

## Explanation



In symmetrical ketone number of carbon atom is same in both side or carbonyl group.



## QUIZZES

### Practice Test 40



5 Questions



5 min

#### Topics

PREPARATIONS of ALDEHYDE AND KETONES,  
Preparation of formaldehyde, Preparation of  
acetaldehyde, Preparation of acetone

[Start Quiz](#)





1/5



5 min



Hint

Q : Ketones are prepared by the oxidation of



Primary alcohols



Secondary alcohols



Tertiary alcohols



None of these



2/5



5 min



Hint

Q : Aldehydes are prepared by the oxidation of



Primary alcohols



Secondary alcohols



Tertiary alcohols



All of above



3/5



5 min



Hint

Q : Which of the following is not used as a catalyst for oxidation of methanol



Copper



Silver



Nickel



Platinized asbestos



4/5



5 min



Hint

Q : The conditions needed for the industrial preparation of formaldehyde are



Cu, Ag 300°C



Pt-asbestos ,300°C

FeO, Mo<sub>2</sub>O<sub>3</sub>, 500°CPdCl<sub>2</sub> , Cu<sub>2</sub>Cl<sub>2</sub> , H<sub>2</sub>O



5/5



5 min



Hint

Q : The ethanal liquid obtained by the oxidation of ethyl alcohol is to be immediately distilled off to avoid its \_\_\_\_\_ to \_\_\_\_\_

Oxidation ,  $\text{CH}_3\text{COOH}$ Reduction ,  $\text{C}_2\text{H}_5\text{OH}$ Decomposition ,  $\text{CO}_2$  &  $\text{H}_2\text{O}$ 

Reduction , ethane



Incorrect



1/5

Q : Ketones are prepared by the oxidation of

A

Primary alcohols

B

Secondary alcohols

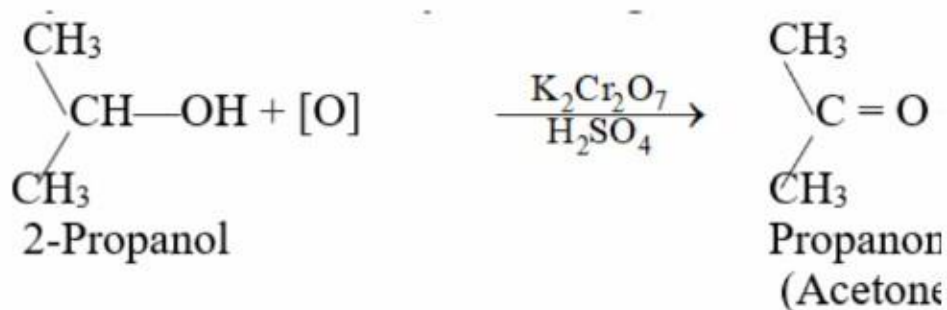
C

Tertiary alcohols

D

None of these

## Explanation



1

2

3

4

5



Incorrect



1/5

Q : Ketones are prepared by the oxidation of



Primary alcohols



Secondary alcohols

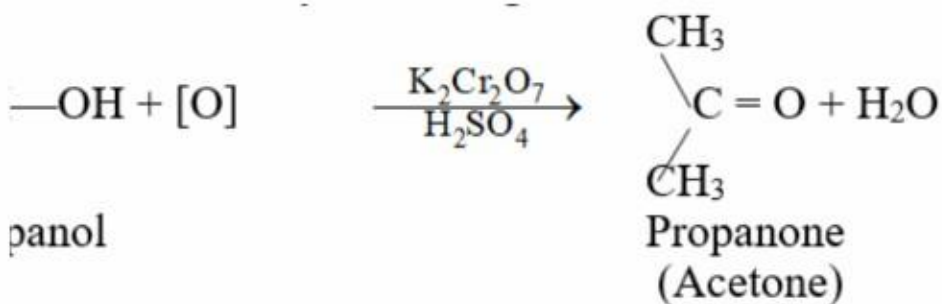


Tertiary alcohols



None of these

## Explanation





Correct



Unattempted



Incorrect



2/5

Q : Aldehydes are prepared by the oxidation of



Primary alcohols



Secondary alcohols



Tertiary alcohols



All of above





Correct



Unattempted



Incorrect



3/5

Q : Which of the following is not used as a catalyst for oxidation of methanol



Copper



Silver



Nickel



Platinized asbestos

## Explanation

methyl alcohol vapours and air over platinised (Pt) asbestos or copper (Cu) or silver (Ag) catalyst at 300°C.





Incorrect



4/5

Q : The conditions needed for the industrial preparation of formaldehyde are



Cu, Ag 300°C

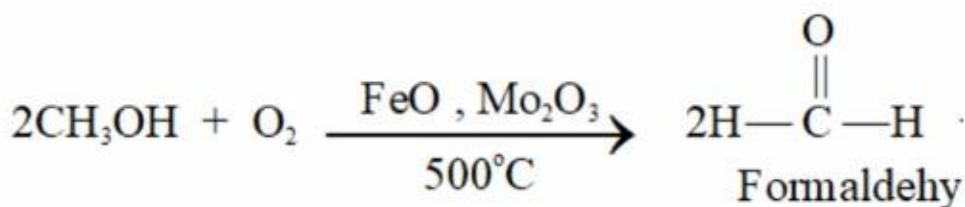


Pt-asbestos ,300°C

FeO, Mo<sub>2</sub>O<sub>3</sub>, 500°CPdCl<sub>2</sub> , Cu<sub>2</sub>Cl<sub>2</sub> , H<sub>2</sub>O

## Explanation

Formaldehyde is manufactured by passing a mixture of methanol vapours and air over fused mixture of iron oxide and molybdenum oxide or silver catalyst at 500°C.





Incorrect



4/5

Q : The conditions needed for the industrial preparation of formaldehyde are



Cu, Ag 300°C

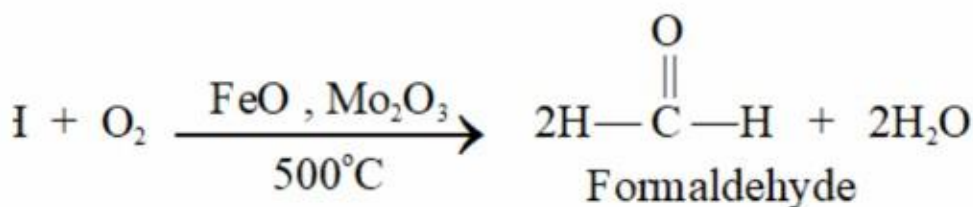


Pt-asbestos ,300°C

FeO, Mo<sub>2</sub>O<sub>3</sub>, 500°CPdCl<sub>2</sub> , Cu<sub>2</sub>Cl<sub>2</sub> , H<sub>2</sub>O

## Explanation

Formaldehyde is manufactured by passing a mixture of methanol and air over fused mixture of iron oxide and molybdenum trioxide catalyst at 500°C.





Correct



Unattempted



Incorrect



5/5

Q : The ethanal liquid obtained by the oxidation of ethyl alcohol is to be immediately distilled off to avoid its \_\_\_\_\_ to \_\_\_\_\_

Oxidation ,  $\text{CH}_3\text{COOH}$ Reduction ,  $\text{C}_2\text{H}_5\text{OH}$ Decomposition ,  $\text{CO}_2$  &  $\text{H}_2\text{O}$ 

Reduction , ethane



## QUIZZES

### Practice Test 41



5 Questions



5 min

#### Topics

REACTIVITY OF CARBONYL GROUP,  
Nucleophilic addition reaction of aldehydes  
and ketones

[Start Quiz](#)



1/5



5 min



Hint

Q : The carbon atom of a carbonyl group is:



sp hybridized

 $sp^2$  hybridized $sp^3$  hybridized

None of these



2/5



5 min



Hint

Q : The carbon atom of a carbonyl group is:



sp hybridized

 $sp^2$  hybridized $sp^3$  hybridized $dsp^2$  hybridized



3/5



5 min



Hint

Q : Which of the following option is true regarding carbonyl group



Planer group



Contains 4-sigma electrons



Contains 2-pi bonds



All of these





4/5



5 min



Hint

Q : The most of the reactions followed by the carbonyl compounds are



A Electrophilic addition reaction



B Nucleophilic addition reaction



C Electrophilic substitution reaction



D Nucleophilic substitution reaction



5/5



5 min



Hint

Q : The \_\_\_\_\_ can be used to prepare carbonyl compound



Destructive distillation



Dry distillation



Vacuum distillation



Fractional distillation



Correct



Unattempted



Incorrect



1/5

Q : The carbon atom of a carbonyl group is:



sp hybridized

 $sp^2$  hybridized $sp^3$  hybridized

None of these





Correct



Unattempted



Incorrect



2/5

Q : The carbon atom of a carbonyl group is:



sp hybridized

sp<sup>2</sup> hybridizedsp<sup>3</sup> hybridizeddsp<sup>2</sup> hybridized



Correct



Unattempted



Incorrect



3/5

Q : Which of the following option is true regarding carbonyl group



Planer group



Contains 4-sigma electrons

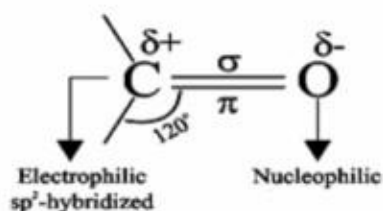


Contains 2-pi bonds



All of these

## Explanation



Q : The most of the reactions followed by the carbonyl compounds are

A

Electrophilic addition reaction

B

Nucleophilic addition reaction

C

Electrophilic substitution reaction

D

Nucleophilic substitution reaction

## Explanation

### Nucleophilic addition reactions:

The unsymmetrical distribution of electronic cloud around carbonyl group makes it polar. It can undergo reaction with nucleophile or electrophile. Whether the initial attack is done by electrophilic reagent or nucleophilic reagent depends upon.

(i) A particular reaction

(ii) Conditions under which the reaction is being carried out.

Most of the reactions of carbonyl compounds are nucleophilic addition reactions.



Correct



Unattempted



Incorrect



5/5

Q : The \_\_\_\_\_ can be used to prepare carbonyl compound



Destructive distillation



Dry distillation



Vacuum distillation



Fractional distillation

## Explanation

### Dry distillation:

Acetaldehyde can also be prepared by the dry distillation of a mixture of calcium salts of formic acid and acetic acid. Acetone is prepared by dry distillation of calcium acetate.







## QUIZZES

### Practice Test 42



5 Questions



5 min

#### Topics

Addition of hydrogen cyanide, Addition of Grignards reagent, Aldol condensation

[Start Quiz](#)





1/5



5 min



Hint

Q : Grignard reagent can react with



Acetaldehyde



Propanol



Formaldehyde



All of these



2/5



5 min



Hint

Q :

Hydrolysis of  $\text{-CN}$  by an aqueous acid generates  $\text{-COOH}$  through

 $\text{-COO}^-$  $\text{-COX}$  $\text{-COOR}$  $\text{-CONH}_2$



3/5



5 min



Hint

Q : The alkoxide ion formed during aldol condensation involves removal of \_\_\_\_\_ from water to get the final product aldol



Hydride ion



Hydrogen ion



Oxide ion



Hydroxide ion



4/5



5 min



Hint

Q : The reaction of  $\text{CH}_3\text{COCH}_3$  with  $\text{NaCN}/\text{HCl}$  combination yields

 $\text{H}_2\text{COH}(\text{CN})$  $\text{H}_3\text{CCHOH}(\text{CN})$  $\text{H}_3\text{CCH}(\text{OH})_2\text{CN}$  $(\text{H}_3\text{C})_2\text{COH}(\text{CN})$



5/5



5 min



Hint

Q : When two moles of acetone are treated with a base the product is



4-hydroxy -4 methyl -2-pentanone



3-hydroxy butanone



3-hydroxy -2-methyl pentanone



3- hydroxyl pentanal



Correct



Unattempted



Incorrect



1/5

Q : Grignard reagent can react with



Acetaldehyde



Propanol



Formaldehyde



All of these

## Explanation

Grignard reagent can react with all types of carbonyl compounds





Incorrect



2/5

Q:

Hydrolysis of  $-\text{CN}$  by an aqueous acid generates  $-\text{COOH}$  through

A

 $-\text{COO}^-$ 

B

 $-\text{COX}$ 

C

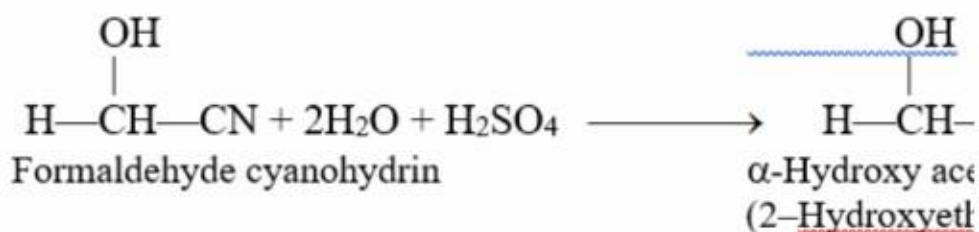
 $-\text{COOR}$ 

D

 $-\text{CONH}_2$ 

## Explanation

The cyano group,  $-\text{C} \equiv \text{N}$  is hydrolysed by an aqueous acid into  $\alpha$ -hydroxy carboxylic acid through  $\alpha$ -hydroxy acid amide.





Incorrect



3/5

Q : The alkoxide ion formed during aldol condensation involves removal of \_\_\_\_\_ from water to get the final product aldol

A

Hydride ion

B

Hydrogen ion

C

Oxide ion

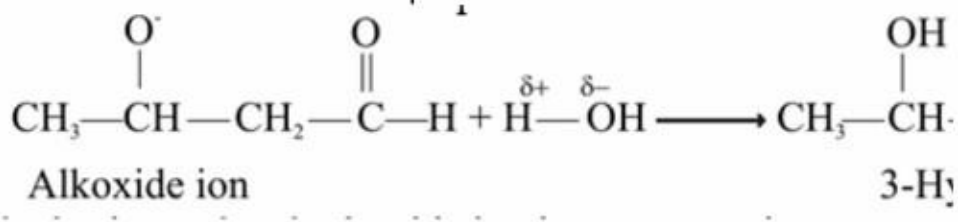
D

Hydroxide ion

## Explanation

### (i) Removal of Proton By Alkoxide:

The alkoxide ion removes a proton from water to form aldol.







Correct



Unattempted



Incorrect



4/5

Q : The reaction of  $\text{CH}_3\text{COCH}_3$  with  $\text{NaCN}/\text{HCl}$  combination yields

A

 $\text{H}_2\text{COH}(\text{CN})$ 

B

 $\text{H}_3\text{CCHOH}(\text{CN})$ 

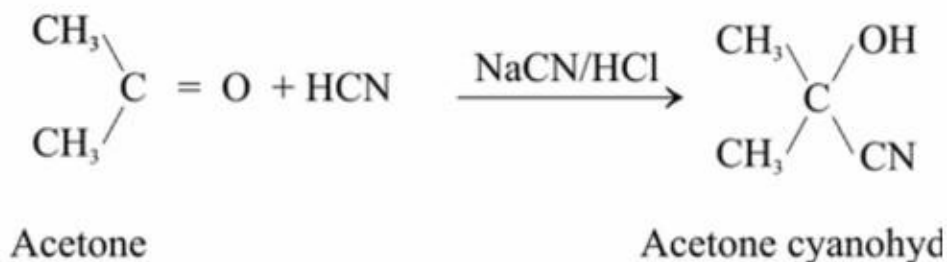
C

 $\text{H}_3\text{CCH}(\text{OH})_2\text{CN}$ 

D

 $(\text{H}_3\text{C})_2\text{COH}(\text{CN})$ 

### Explanation





Correct



Unattempted



Incorrect



5/5

Q : When two moles of acetone are treated with a base the product is



4-hydroxy -4 methyl -2-pentanone



3-hydroxy butanone



3-hydroxy -2-methyl pentanone



3- hydroxyl pentanal





## QUIZZES

### Practice Test 43



5 Questions



5 min

#### Topics

Cannizaros reaction, Haloform reactions,  
Acid catalyzed addition reactions, Reactions  
of ammonia derivatives, Reaction with 2,4  
DNPH

**Start Quiz**



1/5



5 min



Hint

Q : Aldehydes react with hydroxylamine in acidic solution to give:



An oxime



Aldol



Polymer



Acetic acid



2/5



5 min



Hint

Q : Which of the following compounds will not give iodoform test on treatment with  $I_2/NaOH$



Formaldehyde



Methanol



3-pentanone



All of these



3/5



5 min



Hint

Q : Which one has yellow or orange crystalline ppt?



Acetone hydrazone



2,4- dinitrophenyl hydrazone



Ethanal oxime



Bisulphite addition product



4/5



5 min



Hint

Q : Cannizaro's reaction takes place through the transfer of



Hydrogen ion



Hydride ion



Oxide ion



Methoxide ion



5/5



5 min



Hint

Q : Paraldehyde is a trimer formed from \_\_\_\_\_ in the presence of acid

 $\text{CH}_3\text{CHO}$  $\text{CH}_3\text{COCH}_3$  $(\text{CH}_3)_3\text{C-CHO}$  $\text{CH}_3(\text{CH}_2)_2\text{CHO}$





Incorrect



1/5

Q : Aldehydes react with hydroxylamine in acidic solution to give:



An oxime



Aldol



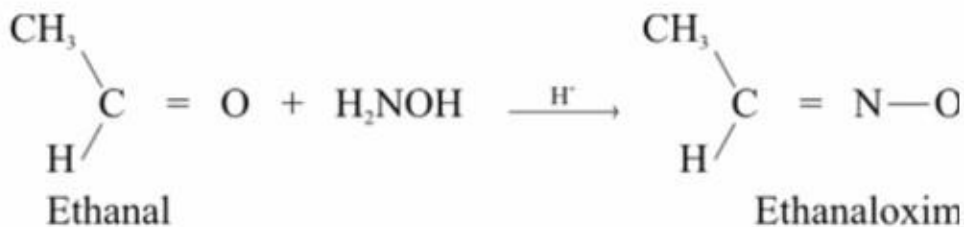
Polymer



Acetic acid

## Explanation

Aldehydes and ketones react with hydroxylamine to form oximes in the presence of an acid.





Incorrect



2/5

Q : Which of the following compounds will not give iodoform test on treatment with  $I_2/NaOH$



Formaldehyde



Methanol



3-pentanone



All of these

## Explanation

The compounds that give haloform reaction are:

- (i) Only acetaldehyde ( among aldehydes)
- (ii) Methyl ketones (among ketones)

2-alkanol (secondary alcohol) and only ethanol (among primary alcohol)



Incorrect



3/5

Q : Which one has yellow or orange crystalline ppt?



A Acetone hydrazone



B 2,4- dinitrophenyl hydrazone



C Ethanal oxime



D Bisulphite addition product

## Explanation

Aldehydes and ketones react with 2, 4-dinitrophenylhydrazine to form 2, 4-dinitrophenylhydrazones in the presence of an acid.

### IMPORTANCE:

This reaction can be used for the identification of aldehydes and ketones because 2, 4-dinitrophenylhydrazones are usually yellow orange crystalline solids.





Correct



Unattempted



Incorrect



4/5

Q : Cannizaro's reaction takes place through the transfer of



Hydrogen ion



Hydride ion



Oxide ion



Methoxide ion

## Explanation

### Hydride Ion Transfer:

The anion transfers a hydride ion to second molecule of formaldehyde.





Q : Paraldehyde is a trimer formed from \_\_\_\_\_ in the presence of acid

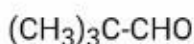
A



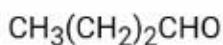
B



C

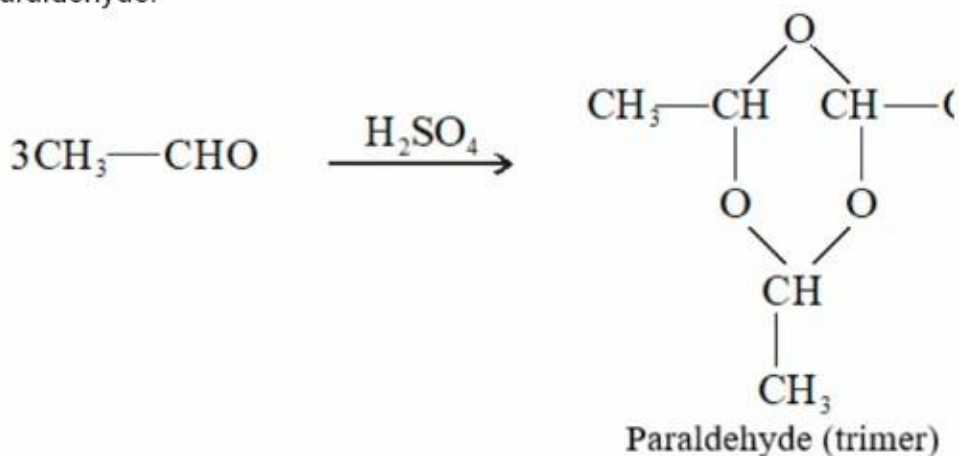


D



## Explanation

Acetaldehyde polymerizes in the presence of dil.  $\text{H}_2\text{SO}_4$  to give paraldehyde.





## QUIZZES

### Practice Test 44



5 Questions



5 min

#### Topics

Addition of alcohols, Reduction with sodium borohydride, Oxidation of ketones

[Start Quiz](#)



1/5



5 min



Hint

Q : Which is most difficult to oxidize?

 $\text{C}_2\text{H}_5\text{CHO}$  $\text{CH}_3\text{CHO}$  $\text{HCHO}$  $\text{CH}_3\text{COCH}_3$





2/5



5 min



Hint

Q : Crotonaldehyde can be converted to \_\_\_\_\_ in the presence of  $\text{NaBH}_4$



2-butene



1-butanol



2-buten-1-ol



All of the above





3/5



5 min



Hint

Q :  $\text{H}_3\text{CCOH}$  on treating with  $\text{H}_5\text{C}_2\text{OH}$  in the presence of dry  $\text{HCl}$  produces

 $\text{H}_3\text{CCH}(\text{OC}_2\text{H}_5)_2$  $\text{CH}_3\text{COCH}_3$  $(\text{H}_3\text{C})_2\text{C}(\text{OC}_2\text{H}_5)$  $(\text{H}_3\text{C})_2\text{C}(\text{C}_2\text{H}_5)_2$



4/5



5 min



Hint

Q : The hydrolysis of acetal generates \_\_\_\_\_ and \_\_\_\_\_ in the presence of acid



Aldehyde , alcohol



Aldehyde , ketone



Ketone , alcohol



Ketone , alcohol



5/5



5 min



Hint

Q : Sodium borohydride ( $\text{NaBH}_4$ ) reduces the \_\_\_\_\_ to form alcohol

 $>\text{C}=\text{C}<$  $>\text{C}=\text{O}$  $-\text{CH}_2-\text{OH}$  $-\text{CH}_3$



Correct



Unattempted



Incorrect



1/5

Q : Which is most difficult to oxidize?

 $\text{C}_2\text{H}_5\text{CHO}$  $\text{CH}_3\text{CHO}$  $\text{HCHO}$  $\text{CH}_3\text{COCH}_3$ 

## Explanation

Ketones do not undergo oxidation easily because they require breaking of strong carbon-carbon bond. They give no reaction with mild oxidizing agents. They are only oxidized by strong oxidizing agents such as  $\text{K}_2\text{Cr}_2\text{O}_7 / \text{H}_2\text{SO}_4$ ,  $\text{KMnO}_4/\text{H}_2\text{SO}_4$ , and conc.  $\text{HNO}_3$ .





Correct



Unattempted



Incorrect



2/5

Q : Crotonaldehyde can be converted to \_\_\_\_\_ in the presence of  $\text{NaBH}_4$



2-butene



1-butanol



2-buten-1-ol

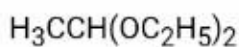


All of the above

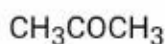
Explanation

Q :  $\text{H}_3\text{CCOH}$  on treating with  $\text{H}_5\text{C}_2\text{OH}$  in the presence of dry  $\text{HCl}$  produces

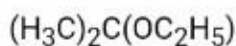
A



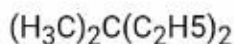
B



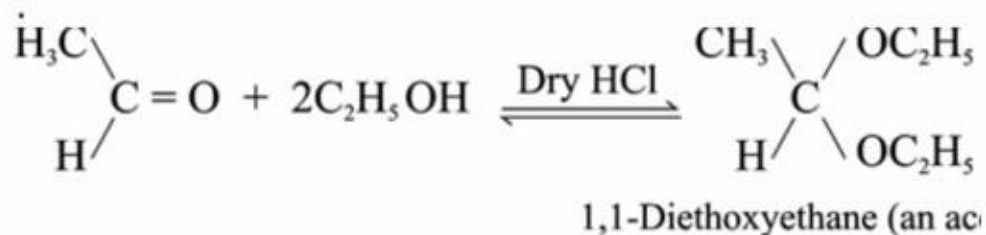
C



D



## Explanation



### IMPORTANCE:

This reaction is used to protect the aldehyde group against alkaline oxidizing agent.



Incorrect



4/5

Q : The hydrolysis of acetal generates \_\_\_\_\_ and \_\_\_\_\_ in the presence of acid



Aldehyde , alcohol



Aldehyde , ketone



Ketone , alcohol

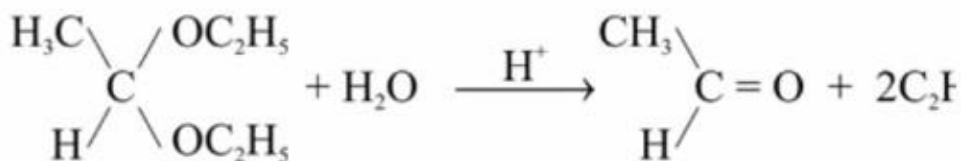


Ketone , alcohol

## Explanation

### Regeneration of Aldehyde from Acetal

To regenerate aldehyde, the acetal is hydrolysed in the presence of an acid.





Correct



Unattempted



Incorrect



5/5

Q : Sodium borohydride ( $\text{NaBH}_4$ ) reduces the \_\_\_\_\_ to form alcohol

 $>\text{C}=\text{C}<$  $>\text{C}=\text{O}$  $-\text{CH}_2-\text{OH}$  $-\text{CH}_3$ 





## QUIZZES

### Practice Test 45



5 Questions



5 min

#### Topics

IDENTIFICATION OF CARBONYL COMPOUNDS

[Start Quiz](#)



1/5



5 min



Hint

Q : 2,4 – Dinitrophenylhydrazine is used to identify the presence of



2,4 – Dinitrophenylhydrazine is used to identify the presence of



**Alcohols**



Ethers



Carbonyl compounds



2/5



5 min



Hint

Q : Silvering of mirror involves the use of:



Fehling's reagent



Benedict's reagent



Tollen's reagent



Bayer's reagent



3/5



5 min



Hint

Q : Which of the following shown silver mirror test



Diethyl ether



Ethyl alcohol



Propanal



Acetone



4/5



5 min



Hint

Q : Benedict's solution and Fehling's solution are similar in all of the following except



A Both contains  $\text{CuSO}_4$



B Both contain  $\text{NaOH}$



C Both contain  $\text{Cu}^{2+}$  ions as oxidizing agent



D Sodium citrate is used in Benedict's solution while Rochelle salt in Fehling's solution



5/5



5 min



Hint

Q : Fehling's solution is



A Ammonical  $\text{AgNO}_3$



B Alkaline cupric tartarate complex ion



C Alkaline cupric citrate complex ion



D Sodium nitroprusside solution



Correct



Unattempted



Incorrect



1/5

Q : 2,4 – Dinitrophenylhydrazine is used to identify the presence of



2,4 – Dinitrophenylhydrazine is used to identify the presence of



Alcohols



Ethers



Carbonyl compounds

## Explanation

### 2,4 DNPH Test:

Aldehydes and ketones form a yellow or red precipitate with 2,4 dinitrophenylhydrazine solution.





Correct



Unattempted



Incorrect



2/5

Q : Silvering of mirror involves the use of:



Fehling's reagent



Benedict's reagent



Tollen's reagent



Bayer's reagent

## Explanation

**]**: Aldehydes form silver mirror with Tollen's reagent (ammoniacal silver nitrate solution). Add Tollen's reagent to an aldehyde solution in a test tube and warm. A silver mirror is formed on the inner of the test tube.





Correct



Unattempted



Incorrect



3/5

Q : Which of the following shown silver mirror test



Diethyl ether



Ethyl alcohol



Propanal



Acetone

## Explanation

Aldehydes form silver mirror with Tollen's reagent (ammoniacal silver nitrate solution). Add Tollen's reagent to an aldehyde solution in a test tube and warm. A silver mirror is formed on the inner of the test tube.



Correct



Unattempted



Incorrect



4/5

Q : Benedict's solution and Fehling's solution are similar in all of the following except

Both contains  $\text{CuSO}_4$ Both contain  $\text{NaOH}$ Both contain  $\text{Cu}^{2+}$  ions as oxidizing agent

Sodium citrate is used in Benedict's solution while Rochelle salt in Fehling's solution

## Explanation

Fehling's Solution Test [an alkaline solution containing a cupric tartrate complex ion and

Benedict's Solution Test [an alkaline solution containing a cupric citrate complex ion





Correct



Unattempted



Incorrect



5/5

Q : Fehling's solution is

Ammonical  $\text{AgNO}_3$ 

Alkaline cupric tartarate complex ion



Alkaline cupric citrate complex ion



Sodium nitroprusside solution

## Explanation

**Fehling's Solution Test [an alkaline solution containing a cupric tartrate complex ion]:**





## QUIZZES

### Practice Test 46



5 Questions



5 min

#### Topics

Uses of formaldehyde, Uses of acetaldehyde

[Start Quiz](#)



1/5



5 min



Hint

Q : Formaldehyde is used as



A Silvering of mirror



B Antipoliiovaccine



C Formamint



D All of these



2/5



5 min



Hint

Q : Which of the following is used as hypnotic drug



Chloral hydrate



Ethanol tetramer



Ethanol trimer



Both a and c



3/5



5 min



Hint

Q : Bakelite is manufactured from



Paraldehyde



Acetaldehyde



Metaformaldehyde



Formaldehyde



4/5



5 min



Hint

Q : Formalin is used as



A germicide and fungicide



An antiseptic and preservative



A disinfectant and sterilizer



All of the above





5/5



5 min



Hint

Q : Which of the following is used as a slug poison



Chloral hydrate



Ethanol tetramer



Ethanal tetramer



Urotropine

Q : Formaldehyde is used as

A Silvering of mirror

B Antipoliiovaccine

C Formamint

D All of these

## Explanation

### Uses of formaldehyde

- It is used in the manufacture of resins like urea-formaldehyde and plastics such as bakelite.
- It is used in the manufacture of dyes such as Indigo, Para-rozaniline, etc.
- Its 40% aqueous solution called formalin is used as an antiseptic, a disinfectant, a germicide, a fungicide and for preserving animal specimens and sterilising surgical instruments.
- It is used as decolourising agent in vat dyeing.
- It is used in the silvering of mirrors.
- It is used in making medicine urotropine used as a urinary track antiseptic.
- It is used in the processing of antipoliiovaccine.
- It is used in making formamint (formaldehyde + lactose) used as throat lozenges.

Q : Which of the following is used as hypnotic drug

A

Chloral hydrate

B

Ethanol tetramer

C

Ethanol trimer

D

Both a and c

## Explanation

### Uses of acetaldehyde

- It is used in the production of acetic acid, acetic anhydride, n-butanol, ethanol, 2-Ethyl -1-hexanol, vinyl acetate, paraldehyde, ethylacetate etc.
- It is used to make acetaldehyde ammonia, used as a rubber-accelerator.
- It is used to make chloral hydrate, ethanol trimer and tetramer. Chloral hydrate and ethanol trimmer are both used as hypnotic drugs where as ethanol tetramer is used as a slug poison.
- It is used as an antiseptic inhalant in nasal infections.
- It is used in silvering of mirrors.
- It is used to make phenolic resins and synthetic drugs.

Q : Bakelite is manufactured from

A

Paraldehyde

B

Acetaldehyde

C

Metaformaldehyde

D

Formaldehyde

## Explanation

### Uses of formaldehyde

- It is used in the manufacture of resins like urea-formaldehyde and plastics such as bakelite.
- It is used in the manufacture of dyes such as Indigo, Para-rosaniline, etc.
- Its 40% aqueous solution called formalin is used as an antiseptic, a disinfectant, a germicide, a fungicide and for preserving animal specimens and sterilising surgical instruments.
- It is used as decolourising agent in vat dyeing.
- It is used in the silvering of mirrors.
- It is used in making medicine urotropine used as a urinary track antiseptic.
- It is used in the processing of antipoliiovaccine.
- It is used in making formamint (formaldehyde + lactose) used as throat lozengens.

Q : Formalin is used as

- A A germicide and fungicide
- B An antiseptic and preservative
- C A disinfectant and sterilizer
- D All of the above**

## Explanation

### Uses of formaldehyde

- It is used in the manufacture of resins like urea-formaldehyde and plastics such as bakelite.
- It is used in the manufacture of dyes such as Indigo, Para-rosaniline, etc.
- Its 40% aqueous solution called formalin is used as an antiseptic, a disinfectant, a germicide, a fungicide and for preserving animal specimens and sterilising surgical instruments.
- It is used as a decolourising agent in vat dyeing.
- It is used in the silvering of mirrors.
- It is used in making medicine urotropine used as a urinary tract antiseptic.
- It is used in the processing of antipoliiovaccine.
- It is used in making formamint (formaldehyde + lactose) used as throat lozenges.



Q : Which of the following is used as a slug poison

A

Chloral hydrate

B

Ethanol tetramer

C

Ethanal tetramer

D

Urotropine

## Explanation

### Uses of acetaldehyde

- It is used in the production of acetic acid, acetic anhydride, n-butanol, ethanol, 2-Ethyl -1-hexanol, vinyl acetate, paraldehyde, ethylacetate etc.
- It is used to make acetaldehyde ammonia, used as a rubber-accelerator.
- It is used to make chloral hydrate, ethanol trimer and tetramer. Chloral hydrate and ethanol trimmer are both used as hypnotic drugs where as ethanol tetramer is used as a slug poison.
- It is used as an antiseptic inhalant in nasal infections.
- It is used in silvering of mirrors.
- It is used to make phenolic resins and synthetic drugs.



## QUIZZES

### Practice Test 47



5 Questions



5 min

#### Topics

INTRODUCTION OF CARBOXYLIC ACIDS,  
NOMENCLATURE OF CARBOXYLIC ACIDS

[Start Quiz](#)



1/5



5 min



Hint

Q : Phthalic acid is also called



Benzoic acid



1, 3-Benzenedicarboxylic acid



1, 2-benzenedicarboxylic acid



1, 4-Benzendicarboxylic acid





2/5



5 min



Hint

Q : Which of the following specie contains maximum numbers of  $-CH_3$  groups



Acetic acid



Propionic acid



Iso-butyric acid



Formic acid



3/5



5 min



Hint

Q : A carboxylic acid contains



A hydroxyl group



A carboxyl group



A hydroxyl and carboxyl group



A carboxyl and an aldehydic group



4/5



5 min



Hint

Q : Which of the following is not a fatty acid?



Propanoic acid



Acetic acid



Phthalic acid



Butanoic acid



5/5



5 min



Hint

Q : The formula of palmitic acid is

 $C_{15}H_{31}COOH$  $C_{15}H_{30}COOH$  $C_{17}H_{34}COOH$  $C_{17}H_{35}COOH$



Correct



Unattempted



Incorrect



1/5

Q : Phthalic acid is also called



Benzoic acid



1, 3-Benzenedicarboxylic acid



1, 2-benzenedicarboxylic acid



1, 4-Benzendicarboxylic acid

## Explanation

IUPAC name of phthalic acid is 1,2-benzene dicarboxylic acid





Correct



Unattempted



Incorrect



2/5

Q : Which of the following specie contains maximum numbers of  $-CH_3$  groups



Acetic acid



Propionic acid

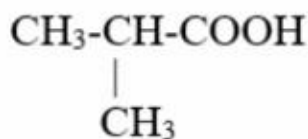


Iso-butyric acid



Formic acid

Explanation



1

2

3

4

5





Correct



Unattempted



Incorrect



3/5

Q : A carboxylic acid contains

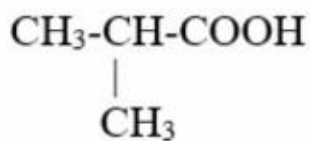
A

B

C

D

Explanation





Incorrect



4/5

Q : Which of the following is not a fatty acid?



Propanoic acid



Acetic acid



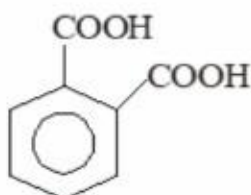
Phthalic acid



Butanoic acid

## Explanation

Aliphatic mono carboxylic acid is also called fatty acid



Phthalic acid





Correct



Unattempted



Incorrect



5/5

Q : The formula of palmitic acid is

 $C_{15}H_{31}COOH$  $C_{15}H_{30}COOH$  $C_{17}H_{34}COOH$  $C_{17}H_{35}COOH$ 

## Explanation

**Palmitic acid**, or hexadecanoic **acid** in IUPAC nomenclature, is the most common saturated fatty **acid** found in animals, plants and microorganisms. Its chemical formula is  $CH_3(CH_2)_{14}COOH$



## QUIZZES

### Practice Test 48



5 Questions



5 min

#### Topics

Methods of preparation - I, Methods of  
preparation - II

[Start Quiz](#)



1/5



5 min



Hint

Q : The \_\_\_\_\_ can be oxidized to corresponding \_\_\_\_\_ having same number of carbon atom as parent compound



Primary alcohol, carboxylic acid



Ketone, carboxylic acid



Aldehydes, carboxylic acid



Both a &amp; c



2/5



5 min



Hint

Q :  $\text{H}_3\text{CMgBr}$  on treating with  $\text{CO}_2$  in the presence of dry ether followed by acid hydrolysis

 $\text{HCOOH}$  $\text{H}_5\text{C}_2\text{COOH}$  $\text{H}_3\text{CCOOH}$  $\text{H}_7\text{C}_3\text{COOH}$



3/5



5 min



Hint

Q : Alkyl cyanide is converted into \_\_\_\_\_ and \_\_\_\_\_ through basic hydrolysis



A Carboxylic acid, ammonium salt



B Salt of carboxylic acid, ammonia



C Carboxylic acid, ammonia



D Acid halide, carboxylic acid



4/5



5 min



Hint

Q : The aliphatic monocarboxylic acids are obtained by hydrolysis of



Proteins and oils



Fats and proteins



Fats and oils



All above



5/5



5 min



Hint

Q : Carboxylic acids are obtained from fats and oils by



Oxidation



Hydrolysis



Carboxylation



Decarboxylation



Correct



Unattempted



Incorrect



1/5

Q : The \_\_\_\_\_ can be oxidized to corresponding \_\_\_\_\_ having same number of carbon atom as parent compound



Primary alcohol, carboxylic acid



Ketone, carboxylic acid



Aldehydes, carboxylic acid



Both a &amp; c

## Explanation

The primary alcohol on oxidation give aldehyde which on further oxidation give carboxylic acid





Correct



Unattempted



Incorrect



2/5

Q :  $\text{H}_3\text{CMgBr}$  on treating with  $\text{CO}_2$  in the presence of dry ether followed by acid hydrolysis

 $\text{HCOOH}$  $\text{H}_5\text{C}_2\text{COOH}$  $\text{H}_3\text{CCOOH}$  $\text{H}_7\text{C}_3\text{COOH}$



Correct



Unattempted



Incorrect



3/5

Q : Alkyl cyanide is converted into \_\_\_\_\_ and \_\_\_\_\_ through basic hydrolysis



Carboxylic acid, ammonium salt



Salt of carboxylic acid, ammonia

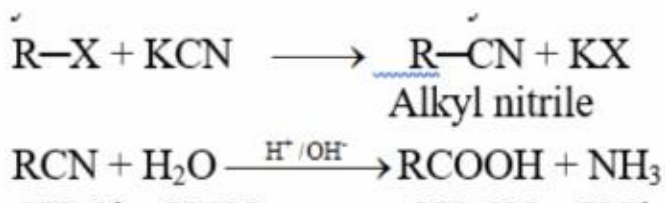


Carboxylic acid, ammonia



Acid halide, carboxylic acid

### Explanation





Correct



Unattempted



Incorrect



4/5

Q : The aliphatic monocarboxylic acids are obtained by hydrolysis of



Proteins and oils



Fats and proteins



Fats and oils



All above

## Explanation

Aliphatic mono carboxylic acid is called as fatty acid because they obtained by hydrolysis of fat and oil



Correct



Unattempted



Incorrect



5/5

Q : Carboxylic acids are obtained from fats and oils by



Oxidation



Hydrolysis



Carboxylation



Decarboxylation

## Explanation

Aliphatic mono carboxylic acid is also called fatty acid because they are obtained by hydrolysis of fats and oil





## QUIZZES

### Practice Test 49



5 Questions



5 min

Topics

PHYSICAL CHARACTERISTICS

[Start Quiz](#)



1/5



5 min



Hint

Q : An acid with pungent smell is



Caproic acid acid



Butyric acid



Valeric acid



Propionic acid



2/5



5 min



Hint

Q : As the molecular mass increases, the solubility of carboxylic acid in water



Increases



Decreases



May sometime increases



May sometimes decreases



3/5



5 min



Hint

Q : In non-polar solvents like benzene the carboxylic acid exist as



Monomers



Polymers



Cyclic polymers



Cyclic dimers





4/5



5 min



Hint

Q : A carboxylic acid having higher boiling point than others is:

 $\text{CH}_3\text{COOH}$  $\text{C}_3\text{H}_7\text{COOH}$  $\text{C}_4\text{H}_9\text{COOH}$  $\text{C}_2\text{H}_5\text{COOH}$



5/5



5 min



Hint

Q : The boiling points of carboxylic acids are \_\_\_\_\_ than their corresponding alkanes.



A Low due to low molecular masses



B High due to high molecular masses



C High due to hydrogen bonding



D Low due to weak intermolecular forces



Correct



Unattempted



Incorrect



1/5

Q : An acid with pungent smell is



Caproic acid acid



Butyric acid



Valeric acid



Propionic acid

## Explanation

(i) **Smell:** The first three aliphatic acids, formic acid, acetic acid, and propionic acid are colourless liquids and have a pungent smell. The next three acids C-4 to C-6 are colourless liquids with somewhat unpleasant smell.



Incorrect



2/5

Q : As the molecular mass increases, the solubility of carboxylic acid in water



Increases



Decreases



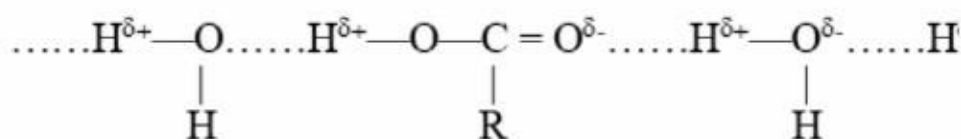
May sometime increases



May sometimes decreases

## Explanation

**Solubility:** Among the aliphatic acids, the first four in water due to hydrogen bonding.



The solubility in water gradually decreases with the incre



Incorrect



3/5

Q : In non-polar solvents like benzene the carboxylic acid exist as



Monomers



Polymers

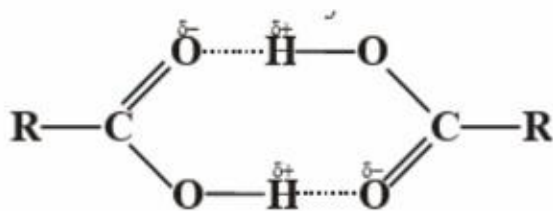


Cyclic polymers



Cyclic dimers

### Explanation



Dimer of a carboxylic acid



Correct



Unattempted



Incorrect



4/5

Q : A carboxylic acid having higher boiling point than others is:

 $\text{CH}_3\text{COOH}$  $\text{C}_3\text{H}_7\text{COOH}$  $\text{C}_4\text{H}_9\text{COOH}$  $\text{C}_2\text{H}_5\text{COOH}$ 

## Explanation

The boiling point of the carboxylic acids are relatively high due to intermolecular hydrogen bonding.



Correct



Unattempted



Incorrect



5/5

Q : The boiling points of carboxylic acids are \_\_\_\_\_ than their corresponding alkanes.



A Low due to low molecular masses



B High due to high molecular masses



C High due to hydrogen bonding



D Low due to weak intermolecular forces

## Explanation

Alkane are non polar and there is london dispersion force in molecule of them but carboxylic acid the polar and there is strong intermolecular force which is hydrogen bonding







## QUIZZES

### Practice Test 50



5 Questions



5 min

#### Topics

REACTIVITY OF CARBOXYLIC GROUP

[Start Quiz](#)





## QUIZZES

### Practice Test 50



5 Questions



5 min

Topics

REACTIVITY OF CARBOXYLIC GROUP

Start Quiz



1/5



5 min



Hint

Q : The carboxyl group displays the chemistry of



Alkyl group



Carbonyl group



Hydroxyl group



Both b &amp; c



2/5



5 min



Hint

Q : In most of the reactions of carboxylic acids, the \_\_\_\_\_ group is retained



Carbonyl group



Carboxyl group



Hydroxyl group



Alkyl group



3/5



5 min



Hint

Q : The reactivity of carboxylic acids is a consequence of presence of



Carbonyl group



Hydroxyl group



Alkyl group



None of the above



4/5



5 min



Hint

Q : The hybridization of carbon in carboxyl group is

 $sp^3$  $sp^2$  $sp$  $dsp^2$



5/5



5 min



Hint

Q : The hybridization associated with oxygen atoms of carboxyl group is

 $sp^3, sp^2$  $sp^3, sp$  $sp^2, sp$  $sp^2, sp^2$



Correct



Unattempted



Incorrect



1/5

Q : The carboxyl group displays the chemistry of



Alkyl group



Carbonyl group



Hydroxyl group



Both b &amp; c





Correct



Unattempted



Incorrect



2/5

Q : In most of the reactions of carboxylic acids, the \_\_\_\_\_ group is retained



Carbonyl group



Carboxyl group



Hydroxyl group



Alkyl group





Correct



Unattempted



Incorrect



3/5

Q : The reactivity of carboxylic acids is a consequence of presence of



Carbonyl group



Hydroxyl group



Alkyl group



None of the above





Correct



Unattempted



Incorrect



4/5

Q : The hybridization of carbon in carboxyl group is

 $sp^3$  $sp^2$  $sp$  $dsp^2$ 



Correct



Unattempted



Incorrect



5/5

Q : The hybridization associated with oxygen atoms of carboxyl group is

 $sp^3, sp^2$  $sp^3, sp$  $sp^2, sp$  $sp^2, sp^2$ 



## QUIZZES

### Practice Test 51



5 Questions



5 min

#### Topics

Reactions of carboxylic acids, Reactions involving H-atom of carboxyl group

**Start Quiz**



1/5



5 min



Hint

Q : The salt formation by carboxylic acids involves



C-O cleavage



O-H cleavage



&gt;C=O cleavage



None of the above



2/5



5 min



Hint

Q : Carboxylic acid undergo the reactions involving replacement of hydroxyl group when treated with



Halides of Phosphorous



Ammonia



Alcohols



All of the above



3/5



5 min



Hint

Q : Carboxylic acid on treating with carbonates or bicarbonates yields salt of carboxylic with the evolution of



CO

CO<sub>2</sub>O<sub>2</sub>H<sub>2</sub>



4/5



5 min



Hint

Q :  $2 \text{HCOOH} + 2 \text{Na} \rightarrow 2 \text{HCOONa} + \underline{\hspace{2cm}}$

 $\text{H}_2$  $\text{O}_2$  $\text{CO}_2$  $\text{CO}$





5/5



5 min



Hint

Q : One of the following organic compound reacts with sodium bicarbonate to produce  $\text{CO}_2$  gas

 $\text{H}_3\text{CCOOH}$  $\text{H}_3\text{CCOCH}_3$  $\text{H}_5\text{C}_2\text{OH}$  $\text{H}_3\text{CCOOCH}_3$



Correct



Unattempted



Incorrect



1/5

Q : The salt formation by carboxylic acids involves



C-O cleavage



O-H cleavage



&gt;C=O cleavage



None of the above





Correct



Unattempted



Incorrect



2/5

Q : Carboxylic acid undergo the reactions involving replacement of hydroxyl group when treated with



Halides of Phosphorous



Ammonia



Alcohols



All of the above



Correct



Unattempted



Incorrect



3/5

Q : Carboxylic acid on treating with carbonates or bicarbonates yields salt of carboxylic with the evolution of



CO

CO<sub>2</sub>O<sub>2</sub>H<sub>2</sub>



Correct



Unattempted



Incorrect



4/5

Q :  $2 \text{HCOOH} + 2 \text{Na} \longrightarrow 2\text{HCOONa} + \underline{\hspace{2cm}}$

 $\text{H}_2$  $\text{O}_2$  $\text{CO}_2$  $\text{CO}$ 



Correct



Unattempted



Incorrect



5/5

Q : One of the following organic compound reacts with sodium bicarbonate to produce  $\text{CO}_2$  gas

 $\text{H}_3\text{CCOOH}$  $\text{H}_3\text{CCOCH}_3$  $\text{H}_5\text{C}_2\text{OH}$  $\text{H}_3\text{CCOOCH}_3$ 



## QUIZZES

### Practice Test 52



5 Questions



5 min

#### Topics

Reactions involving OH of carboxyl group -I,  
Reactions involving OH of carboxyl group -II,  
Reactions involving carboxyl group

**Start Quiz**



1/5



5 min



Hint

Q : The by product obtained, when ammonium acetate is heated to produce acetamide

 $NH_3$  $CO_2$  $N_2$  $H_2O$





2/5



5 min



Hint

Q :  $\text{RCOOH}$  when heated strongly in the presence of  $\text{P}_2\text{O}_5$ , it yields

 $(\text{RCOO})_2\text{O}$  $(\text{RCO})_2\text{O}$  $(\text{RCOO})_2\text{O}_2$  $(\text{RCO})_2\text{O}_2$



3/5



5 min



Hint

Q : Which reagent is used to reduce a carboxylic group to an alcohol

 $\text{H}_2/\text{Ni}$  $\text{H}_2/\text{Pt}$  $\text{NaBH}_4$  $\text{LiAlH}_4$



4/5



5 min



Hint

Q : Reverse process of esterification is called



De-esterification



Neutralization



Hydrolysis



Hydration



5/5



5 min



Hint

Q : The odour of esters are



Pungent



Suffocating



Pleasant even if derived from pungent acid



Either pungent or sweet smelling



Correct



Unattempted



Incorrect



1/5

Q : The by product obtained, when ammonium acetate is heated to produce acetamide

 $NH_3$  $CO_2$  $N_2$  $H_2O$ 



Correct



Unattempted



Incorrect



2/5

Q :  $\text{RCOOH}$  when heated strongly in the presence of  $\text{P}_2\text{O}_5$ , it yields

 $(\text{RCOO})_2\text{O}$  $(\text{RCO})_2\text{O}$  $(\text{RCOO})_2\text{O}_2$  $(\text{RCO})_2\text{O}_2$ 



Correct



Unattempted



Incorrect



3/5

Q : Which reagent is used to reduce a carboxylic group to an alcohol

 $\text{H}_2/\text{Ni}$  $\text{H}_2/\text{Pt}$  $\text{NaBH}_4$  $\text{LiAlH}_4$ 



Correct



Unattempted



Incorrect



4/5

Q : Reverse process of esterification is called



De-esterification



Neutralization



Hydrolysis



Hydration







Correct



Unattempted



Incorrect



5/5

Q : The odour of esters are



Pungent



Suffocating



Pleasant even if derived from pungent acid



Either pungent or sweet smelling



## QUIZZES

### Practice Test 53



5 Questions



5 min

#### Topics

Manufacture of acetic acid, Physical characteristics, Reactions of acetic acid, Uses of acetic acid

**Start Quiz**



1/5



5 min



Hint

Q : Ethyl alcohol is commercially prepared by the process called



Oxidation



Condensation



Esterification



Fermentation



2/5



5 min



Hint

Q : Pure acetic acid freezes to ice like solid at

 $8^{\circ}\text{C}$  $39^{\circ}\text{C}$  $25^{\circ}\text{C}$  $17^{\circ}\text{C}$



3/5



5 min



Hint

Q : Acetic acid is used as coagulant in



*Paper industry*



*Glass industry*



*Rubber industry*



*Plastic industry*



4/5



5 min



Hint

Q : Vinyl alcohol isomerises to \_\_\_\_\_



Ethyne



Ethanol



Ethanal



Ethanoic acid



5/5



5 min



Hint

Q : Ethanol can be converted into ethanoic acid by



Hydrogenation



Hydration



Oxidation



Fermentation



Correct



Unattempted



Incorrect



1/5

Q : Ethyl alcohol is commercially prepared by the process called



Oxidation



Condensation



Esterification



Fermentation





Correct



Unattempted



Incorrect



2/5

Q : Pure acetic acid freezes to ice like solid at

8<sup>0</sup>C39<sup>0</sup>C25<sup>0</sup>C17<sup>0</sup>C



Correct



Unattempted



Incorrect



3/5

Q : Acetic acid is used as coagulant in



*Paper industry*



*Glass industry*



*Rubber industry*



*Plastic industry*



Correct



Unattempted



Incorrect



4/5

Q : Vinyl alcohol isomerises to \_\_\_\_\_



Ethyne



Ethanol



Ethanal



Ethanoic acid





Correct



Unattempted



Incorrect



5/5

Q : Ethanol can be converted into ethanoic acid by



Hydrogenation



Hydration



Oxidation



Fermentation





## QUIZZES

### Practice Test 54



5 Questions



5 min

#### Topics

Amino acids and its types, Nomenclature of amino acids, Structure of amino acids, Acidic and basic characters of amino acids, Reactions of amino acids

[Start Quiz](#)



1/5



5 min



Hint

Q : Glycine may be classified as



A basic amino acid



An acidic amino acid



An aromatic amino acid



A neutral amino acid



2/5



5 min



Hint

Q : Which of the following is not an amino acid?

*Glutamic acid*

Lactic acid



Aspartic acid



Glycine



3/5



5 min



Hint

Q : Zwitter ion exists in the form of anion in



*Alkaline medium*



*Acidic medium*



*Aqueous medium*



*Ethereal medium*





4/5



5 min



Hint

Q : IUPAC name of Glycine is



2-amino ethanoic acid



2-amino propanoic acid



2-amino butanoic acid

 $\alpha$ - amino acetic acid



5/5



5 min



Hint

Q :  $\text{CH}_3\text{CH}_2\text{COOH}$  on reaction with  $\text{Br}_2$  in the presence of P yields \_\_\_\_\_, which on reaction with  $\text{NH}_3$  produces an amino acid



2-Bromomethanoic acid



2-Bromoethanoic acid



2-Bromopropanoic acid



2-Bromobutanoic acid



Correct



Unattempted



Incorrect



1/5

Q : Glycine may be classified as



A basic amino acid



An acidic amino acid



An aromatic amino acid



A neutral amino acid





Correct



Unattempted



Incorrect



2/5

Q : Which of the following is not an amino acid?

*Glutamic acid*

Lactic acid



Aspartic acid



Glycine





Correct



Unattempted



Incorrect



3/5

Q : Zwitter ion exists in the form of anion in

*Alkaline medium**Acidic medium**Aqueous medium**Ethereal medium*



Correct



Unattempted



Incorrect



4/5

Q : IUPAC name of Glycine is



2-amino ethanoic acid



2-amino propanoic acid



2-amino butanoic acid

 $\alpha$ - amino acetic acid



Correct



Unattempted



Incorrect



5/5

Q :  $\text{CH}_3\text{CH}_2\text{COOH}$  on reaction with  $\text{Br}_2$  in the presence of P yields \_\_\_\_\_, which on reaction with  $\text{NH}_3$  produces an amino acid



2-Bromomethanoic acid



2-Bromoethanoic acid



2-Bromopropanoic acid



2-Bromobutanoic acid



## QUIZZES

### Practice Test 55



5 Questions



5 min

#### Topics

INTRODUCTION OF MACROMOLECULES,  
STRUCTURE OF POLYMERS

[Start Quiz](#)





1/5



5 min



Hint

Q : Acceptance of macromolecular hypothesis came about in



1900's



1880's



1920's



1860's



2/5



5 min



Hint

Q : Two main classes of macromolecules are



A Inorganic and synthetic



B Organic and Biopolymers



C Inorganic and Biopolymer



D Inorganic and organic polymers



3/5



5 min



Hint

Q : On the basis of structure, polymers may be of



Two types



Three types



Four types



Five types



4/5



5 min



Hint

Q : The number of repeating units in the chain of polymer is called



Extent of polymerization



Degree of polymerization



Length of polymerization



All of the above



5/5



5 min



Hint

Q : The properties of polymer depend upon



A Structure of polymer



B Chemical composition



C Both a and b



D None of above



Correct



Unattempted



Incorrect



1/5

Q : Acceptance of macromolecular hypothesis came about in



1900's



1880's



1920's



1860's

## Explanation

Acceptance of the macromolecular hypothesis came about in 1920's largely because of the efforts of **Staudinger**.





Correct



Unattempted



Incorrect



2/5

Q : Two main classes of macromolecules are



Inorganic and synthetic



Organic and Biopolymers



Inorganic and Biopolymer



Inorganic and organic polymers



Correct



Unattempted



Incorrect



3/5

Q : On the basis of structure, polymers may be of



Two types



Three types



Four types



Five types

## Explanation

There are three types of polymer  
1-linear polymer, 2-branch polymer, 3-cross linked polymer







Correct



Unattempted



Incorrect



4/5

Q : The number of repeating units in the chain of polymer is called



Extent of polymerization



Degree of polymerization



Length of polymerization



All of the above

## Explanation

**Degree of polymerization:** The number of monomer units in a polymer chain is called

degree of polymerization (DP). The length of polymer chain is specified by its degree of

polymerization.



Correct



Unattempted



Incorrect



5/5

Q : The properties of polymer depend upon



Structure of polymer



Chemical composition



Both a and b



None of above



## QUIZZES

### Practice Test 56



5 Questions



5 min

#### Topics

TYPES OF POLYMERS, Homopolymer,  
Terpolymer

[Start Quiz](#)



1/5



5 min



Hint

Q : Based on their thermal properties, polymers can be divided into



Two types



Three types



Four types



Five types



2/5



5 min



Hint

Q : On the basis of type of monomers, the polymers can be divided into



Five types



Two types



Four types



Three types



3/5



5 min



Hint

Q : A polymer formed by the polymerisation of a single type of monomers is called



Copolymer



Terpolymer



Homopolymer



Isopolymer



4/5



5 min



Hint

Q : A polymer formed by the polymerization of three different monomers is called



Copolymer



Terpolymer



Homopolymer



Crosslinked polymer



5/5



5 min



Hint

Q : The polymer which becomes hard on heating and cannot be softened again are called



Synthetic polymer



Thermoplastic polymer



Thermosetting polymer



Addition polymer





Correct



Unattempted



Incorrect



1/5

Q : Based on their thermal properties, polymers can be divided into



Two types



Three types



Four types



Five types





Correct



Unattempted



Incorrect



2/5

Q : On the basis of type of monomers, the polymers can be divided into



Five types



Two types



Four types



Three types



Q : A polymer formed by the polymerisation of a single type of monomers is called

A

Copolymer

B

Terpolymer

C

Homopolymer

D

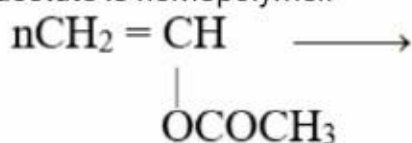
Isopolymer

## Explanation

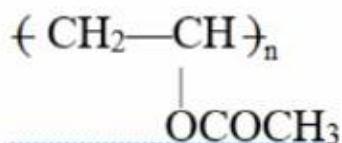
### Homopolymer:

A polymer formed by the polymerization of one type of monomer is called homopolymer.

**Example:** The polymer formed by the polymerization of vinyl acetate is homopolymer.



Vinyl acetate



polyvinyl acetate (A homopolymer)

Q : A polymer formed by the polymerization of three different monomers is called

A

Copolymer

B

Terpolymer

C

Homopolymer

D

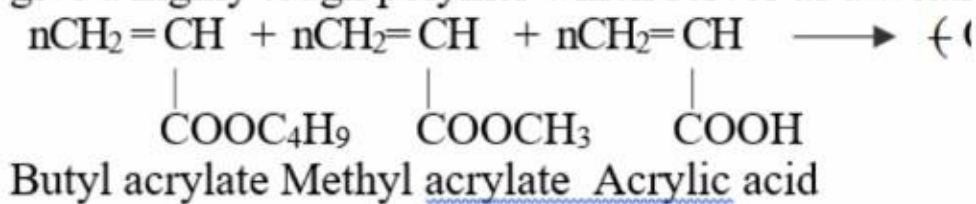
Crosslinked polymer

## Explanation

### Terpolymer:

A polymer formed by the polymerization of three different monomers is called a terpolymer. This polymerization reaction is carefully

**Example:** Combination of butyl acrylate, methyl acrylate, and acrylic acid give a highly tough polymer which serves as a weather-resistant material.





Correct



Unattempted



Incorrect



5/5

Q : The polymer which becomes hard on heating and cannot be softened again are called



Synthetic polymer



Thermoplastic polymer



Thermosetting polymer



Addition polymer





## QUIZZES

### Practice Test 57



5 Questions



5 min

#### Topics

POLYMERIZATION PROCESS, Addition polymerization, Condensation polymerization

[Start Quiz](#)



1/5



5 min



Hint

Q : Addition polymerization is



Free radical addition



Cationic addition



Anionic addition



All of these



2/5



5 min



Hint

Q : In which of these processes are small organic molecules made into macromolecules



The cracking of petroleum fractions



The fractional distillation of crude oil



The polymerization of ethene



The hydrolysis of proteins





3/5



5 min



Hint

Q : Polystyrene is the type of



Addition polymer



Condensation polymer



Both a and b



None of these



4/5



5 min



Hint

Q : Addition polymerization requires



Free radical



Cationic



Anionic



More than one functional group



5/5



5 min



Hint

Q : Which one of the following is a condensation polymer?



Polystyrene



PVC



Polyethene



Nylon 6,6



Incorrect



1/5

Q : Addition polymerization is



Free radical addition



Cationic addition



Anionic addition



All of these

## Explanation

A polymerization process in which monomers just add up without the removal of smaller molecules is called Addition polymer.

It is a free-radical addition reaction which involves

(i) Initiation

(ii) Propagation

(iii) Termination

**Example:** Polymerization of styrene is an example of addition polymers.



Correct



Unattempted



Incorrect



2/5

Q : In which of these processes are small organic molecules made into macromolecules



The cracking of petroleum fractions



The fractional distillation of crude oil



The polymerization of ethene



The hydrolysis of proteins



Incorrect



3/5

Q : Polystyrene is the type of



Addition polymer



Condensation polymer



Both a and b

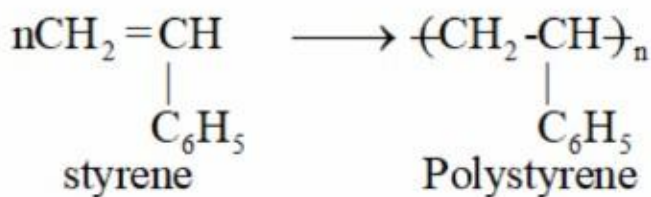


None of these

## Explanation

It is the polymer of styrene (vinyl benzene).

It is also an addition polymer and is obtained by the polymerization of styrene in the presence of a catalyst.





Incorrect



4/5

Q : Addition polymerization requires



Free radical



Cationic



Anionic



More than one functional group

## Explanation

### Addition polymerization:

A polymerization process in which monomers just add up without the removal of smaller molecules is called Addition polymer.

It is a free-radical addition reaction which involves

(i) Initiation

(ii) Propagation

(iii) Termination

**Example:** Polymerization of styrene is an example of addition polymers.







Correct



Unattempted



Incorrect



5/5

Q : Which one of the following is a condensation polymer?



Polystyrene



PVC



Polyethene



Nylon 6,6

## Explanation

A condensation polymer of diammine and aliphatic dicarboxylic acid is called polyamide or polyamide resin since it contains amide linkages. This polymer is also called nylon.

The polymer of hexamethylene diammine (6C) and adipic acid (6C) is called **Nylon-6,6**







## QUIZZES

### Practice Test 58



5 Questions



5 min

#### Topics

BRIEF DESCRIPTION OF SYNTHETIC POLYMERS,  
Synthetic polymers - I, Synthetic polymers - II

[Start Quiz](#)



1/5



5 min



Hint

Q : The polymer used in floor covering, pipes and gramophones



Polystyrene



PVA



PVC



Nylon 6,6



2/5



5 min



Hint

Q : In the manufacturing of polystyrene, the plasticizers are added to



A Increase hardness of polymer



B Improve flexibility



C Develop insulation properties in polymer



D All of above



3/5



5 min



Hint

Q : Which of following polymers is a synthetic polymer



Animal fat



Polyester



Starch



Cellulose



4/5



5 min



Hint

Q : Which one of the following is not a synthetic polymer



Animal fat



Cellulose



Starch



All of these



5/5



5 min



Hint

Q : Which of these polymers is an example of addition polymer?



Nylon-6,6



Polystyrene



Terylene



Epoxy resin



Q : The polymer used in floor covering, pipes and gramophones

A

Polystyrene

B

PVA

C

PVC

D

Nylon 6,6

## Explanation

### (1) Polyvinyl Chloride (PVC):

This is the polymer of vinyl chloride.

It is an addition polymer obtained by polymerizing vinyl chloride at  $52^{\circ}\text{C}$  and 9 atm pressure.

Plasticizer: Addition of a plasticizer improves the flexibility of the polymer.

**Uses:** It is widely used in

- Floor coverings
- Pipes

Gramophone recorders etc.



Correct



Unattempted



Incorrect



2/5

Q : In the manufacturing of polystyrene, the plasticizers are added to



Increase hardness of polymer



Improve flexibility



Develop insulation properties in polymer



All of above

## Explanation

In the manufacturing of polystyrene, the plasticizers are added to Improve flexibility







Correct



Unattempted



Incorrect



3/5

Q : Which of following polymers is a synthetic polymer



Animal fat



Polyester



Starch



Cellulose



Correct



Unattempted



Incorrect



4/5

Q : Which one of the following is not a synthetic polymer



Animal fat



Cellulose



Starch



All of these

## Explanation

All of these are naturally occurring macro molecules





Correct



Unattempted



Incorrect



5/5

Q : Which of these polymers is an example of addition polymer?



Nylon-6,6



Polystyrene



Terylene



Epoxy resin





## QUIZZES

### Practice Test 59



5 Questions



5 min

#### Topics

BIOPOLYMERS, Carbohydrates and  
its classification, Oligosaccharides,  
Polysaccharides, Proteins

[Start Quiz](#)



1/5



5 min



Hint

Q : A carbohydrate which cannot be hydrolyzed is



Monosaccharide



Disaccharide



Starch



Polysaccharide



2/5



5 min



Hint

Q : The molecular formula of Raffinose is

 $C_{16}H_{34}O_{14}$  $C_{18}H_{36}O_{18}$  $C_{18}H_{32}O_{16}$  $C_{20}H_{40}O_{20}$



3/5



5 min



Hint

Q : The main structural feature of protein is



Ester linkage



Peptide linkage



Ether linkages



Glycosidic linkage



4/5



5 min



Hint

Q : In which form glucose is stored in the liver:



Lactic acid



Maltose



Ribose



Glycogen





5/5



5 min



Hint

Q : Which is not a polymer



Starch



Glucose



Protein



Nylon



Correct



Unattempted



Incorrect



1/5

Q : A carbohydrate which cannot be hydrolyzed is



Monosaccharide



Disaccharide



Starch



Polysaccharide

## Explanation

### Monosaccharides:

- These are simple sugars which cannot be hydrolyzed.
- They have an empirical formula  $(CH_2O)_n$ , where  $n = 3$  or some large number.

Common examples are glyceraldehydes, glucose, fructose, etc.



Correct



Unattempted



Incorrect



2/5

Q : The molecular formula of Raffinose is

 $C_{16}H_{34}O_{14}$  $C_{18}H_{36}O_{18}$  $C_{18}H_{32}O_{16}$  $C_{20}H_{40}O_{20}$ 

## Explanation

The carbohydrates which yield three monosaccharide molecules on hydrolysis are called trisaccharides and have molecular formula  $C_{18}H_{32}O_{16}$ .





Correct



Unattempted



Incorrect



3/5

Q : The main structural feature of protein is



Ester linkage



Peptide linkage



Ether linkages



Glycosidic linkage

## Explanation

- The majority of proteins are compact, highly convoluted molecules with the position of each atom relative to the other determined with great precision.
- To describe the structure of a protein in an organism it is necessary to specify the three-dimensional shape that the polypeptide chain assumes.





Correct



Unattempted



Incorrect



4/5

Q : In which form glucose is stored in the liver:



Lactic acid



Maltose



Ribose



Glycogen





Correct



Unattempted



Incorrect



5/5

Q : Which is not a polymer



Starch



Glucose



Protein



Nylon



## QUIZZES

### Practice Test 60



5 Questions



5 min

#### Topics

Lipids, Structure and composition of fats,  
Chemical properties, Iodine number, Acid  
number

[Start Quiz](#)



1/5



5 min



Hint

Q : The amount of free fatty acids in a fat or oil is measured as



Acid number



Iodine number



Saponification number



Gold number





2/5



5 min



Hint

Q : Degree of unsaturation of fat or oil is measured as



Fat number



Acid number



Iodine number



Saponification number



3/5



5 min



Hint

Q : The degree of unsaturation of the constituent fatty acid determines



Physical state



Acidity



Chemical reactivity



None of these



4/5



5 min



Hint

Q : Which of the following is unsaturated fatty acid



Malonic acid



Stearic acid



Palmitic acid



Oleic acid



5/5



5 min



Hint

Q :

The reaction between a fat and NaOH is called



Esterification



Hydrogenolysis



Fermentation



Saponification



Correct



Unattempted



Incorrect



1/5

Q : The amount of free fatty acids in a fat or oil is measured as



Acid number



Iodine number



Saponification number



Gold number

## Explanation

- The acid number of a fat or an oil tells the amount of free fatty acids present in it.

It is expressed as the number of milligrams of potassium hydroxide required to neutralize one gram of fat.



Correct



Unattempted



Incorrect



2/5

Q : Degree of unsaturation of fat or oil is measured as



Fat number



Acid number



Iodine number



Saponification number



Correct



Unattempted



Incorrect



3/5

Q : The degree of unsaturation of the constituent fatty acid determines



Physical state



Acidity



Chemical reactivity



None of these

## Explanation

The degree of unsaturation of the constituent fatty acid determines whether a triglyceride will be a solid or a liquid.





Incorrect



4/5

Q : Which of the following is unsaturated fatty acid

A

Malonic acid

B

Stearic acid

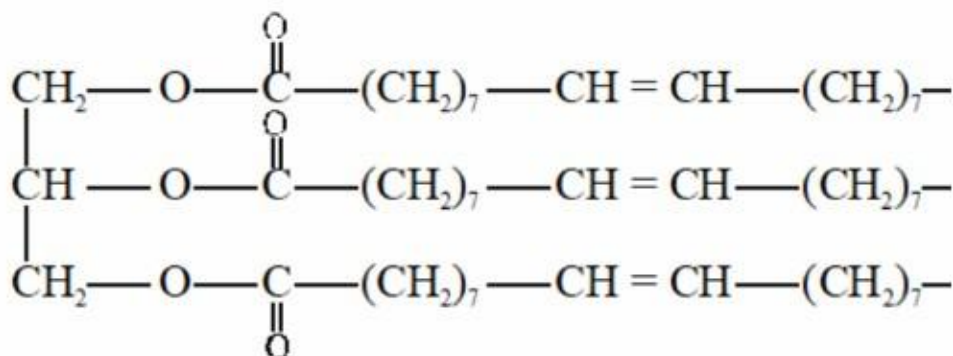
C

Palmitic acid

D

Oleic acid

## Explanation

**Glycerol trioleate (an oil)**





Correct



Unattempted



Incorrect



5/5

Q:

The reaction between a fat and NaOH is called



Esterification



Hydrogenolysis



Fermentation



Saponification





## QUIZZES

### Practice Test 61



5 Questions



5 min

#### Topics

Enzymes, Properties of enzyme, Importance of enzyme, Nucleic acids, Components of nucleic acids

[Start Quiz](#)



1/5



5 min



Hint

Q : The protein part of an enzyme is called.



Apoenzyme



Co-enzyme



Cofactor



Activator



2/5



5 min



Hint

Q : The non-protein part of an enzyme is called



Co-enzyme



Apoenzyme



Activator



Substrate



3/5



5 min



Hint

Q :

DNA is responsible for



Heredity



Reproduction



Inheritance



Multiplication



4/5



5 min



Hint

Q : The enzyme used to locally stop the blood from wounds



Insulin



L-asparaginase



Thrombin



Zymase



5/5



5 min



Hint

Q : The Nitrogenous base not present in RNA is



Cytosin



Adenine



Thiamine



Uracil



Correct



Unattempted



Incorrect



1/5

Q : The protein part of an enzyme is called.



Apoenzyme



Co-enzyme



Cofactor



Activator

## Explanation

The protein component of the enzyme is called **apo-enzyme** and the non-protein component is called the **co-enzyme**





Correct



Unattempted



Incorrect



2/5

Q : The non-protein part of an enzyme is called



Co-enzyme



Apoenzyme



Activator



Substrate

## Explanation

The protein component of the enzyme is called **apo-enzyme** and the non-protein component is called the **co-enzyme**



Correct



Unattempted



Incorrect



3/5

Q :

DNA is responsible for



Heredity



Reproduction



Inheritance



Multiplication

## Explanation

Dexoyribonucleic acid (DNA) carries the genetic information and ribonucleic acid





Correct



Unattempted



Incorrect



4/5

Q : The enzyme used to locally stop the blood from wounds



Insulin



L-asparaginase



Thrombin



Zymase

## Explanation

- Many enzymes have proved very useful as drugs.

**Example:** Thrombin is used locally to stop bleeding.





Correct



Unattempted



Incorrect



5/5

Q : The Nitrogeous base not present in RNA is



Cytosin



Adenine



Thiamine



Uracil





## QUIZZES

### Practice Test 62



4 Questions



5 min

Topics

FERTILIZERS

Start Quiz



1/4



5 min



Hint

Q : The nitrogen present in some fertilizers helps plants



To fight against diseases



To produce fat



To undergo photosynthesis



To produce protein



2/4



5 min



Hint

Q : A manure is



A An organic material



B An inorganic material



C A chemical compound



D A mixture of organic and inorganic materials



3/4



5 min



Hint

Q : Which element is essential for the development of stem and leaves?



Phosphorus



Calcium



Nitrogen



Boron





4/4



5 min



Hint

Q : The acidity caused by nitrogen fertilizers can easily be controlled by the



Addition of excessive water



Addition of gypsum at regular intervals



Addition of milk of magnesia at regular intervals



Addition of lime at regular intervals



Correct



Unattempted



Incorrect



1/4

Q : The nitrogen present in some fertilizers helps plants



To fight against diseases



To produce fat



To undergo photosynthesis



To produce protein

## Explanation

**Nitrogen** is so vital because it is a major component of chlorophyll, the compound by which **plants** use sunlight energy to **produce** sugars from water and carbon dioxide (i.e., photosynthesis). It is also a major component of amino acids, the building blocks of **proteins**. Without **proteins**, **plants** wither and die.





Correct



Unattempted



Incorrect



2/4

Q : A manure is



An organic material



An inorganic material



A chemical compound



A mixture of organic and inorganic materials

## Explanation

**Manure** is [organic matter](#) that is used as [organic fertilizer](#) in [agriculture](#). Most manure consists of animal [feces](#); other sources include [compost](#) and [green manure](#).



Correct



Unattempted



Incorrect



3/4

Q : Which element is essential for the development of stem and leaves?



Phosphorus



Calcium



Nitrogen



Boron

## Explanation

- Nitrogen is the main constituent of proteins.
- It imparts green colour to the leaves.

It enhances the yield and quality of the plant



Correct



Unattempted



Incorrect



4/4

Q : The acidity caused by nitrogen fertilizers can easily be controlled by the



Addition of excessive water



Addition of gypsum at regular intervals



Addition of milk of magnesia at regular intervals



Addition of lime at regular intervals





## QUIZZES

### Practice Test 63



5 Questions



5 min

#### Topics

ELEMENTS ESSENTIAL FOR PLANT GROWTH,  
Macro-nutrients, Micro-nutrients

[Start Quiz](#)



1/5



5 min



Hint

Q : The three elements needed for the healthy growth of plants are:



N,S,P



N,Ca,P



N,P,K



N,K,C



2/5



5 min



Hint

Q : Macronutrient for soil is

 $N_2$ 

Cu



Zn



Fe





3/5



5 min



Hint

Q : The elements which are essential for plant growth can be classified into



Three types



Four types



Two types



Five types



4/5



5 min



Hint

Q : The macronutrients for plant are those which



A Are required in very large amount



B Are produced from plants in very small amounts



C Are required in very small amount



D Retard the growth of plants



5/5



5 min



Hint

Q : Which of two non-metals are included in micronutrients



Carbon and Bromine



Hydrogen and oxygen



Boron and chlorine



Nitrogen and phosphorus



Incorrect



1/5

Q : The three elements needed for the healthy growth of plants are:

A

N,S,P

B

N,Ca,P

C

N,P,K

D

N,K,C

## Explanation

A nutrient which is required in large quantities for normal growth of plants is called macronutrient.

Examples:

(i) Nitrogen  
Calcium

(ii) Phosphorus

(iii) Potassium

(iv)

(v) Magnesium  
Hydrogen

(vi) Sulphur

(vii) Carbon

(viii)

(ix) Oxygen





Incorrect



2/5

Q : Macronutrient for soil is

A

 $N_2$ 

B

Cu

C

Zn

D

Fe

## Explanation

Nutrients which are required in small amount for normal growth of plants are called micronutrients.

### Examples:

(i) Boron  
Manganese

(ii) Copper

(iii) Iron

(iv)

(v) Zinc

(vi) Molybdenum

(vii) Chlorine.





Incorrect



3/5

Q : The elements which are essential for plant growth can be classified into

A

Three types

B

Four types

C

Two types

D

Five types

## Explanation

Elements required for the normal growth of plants are called **nutrients**. Plants need nutrients from the soil for the healthy growth.

### Types of nutrients:

(i) Micro nutrient

Macro nutrient



Q : The macronutrients for plant are those which

**A**

Are required in very large amount

**B**

Are produced from plants in very small amounts

**C**

Are required in very small amount

**D**

Retard the growth of plants

## Explanation

A nutrient which is required in large quantities for normal growth of plants is called macronutrient.

Examples:

(i) Nitrogen  
Calcium

(ii) Phosphorus

(iii) Potassium

(iv)

(v) Magnesium  
Hydrogen

(vi) Sulphur

(vii) Carbon

(viii)

(ix) Oxygen

***They are generally required in quantities ranging from 5kg to 200kg per acre of the land***





Incorrect



5/5

Q : Which of two non-metals are included in micronutrients



Carbon and Bromine



Hydrogen and oxygen



Boron and chlorine



Nitrogen and phosphorus

## Explanation

Nutrients which are required in small amount for normal growth of plants are called micronutrients.

### Examples:

(i) Boron  
Manganese

(ii) Copper

(iii) Iron

(iv)

(v) Zinc

(vi) Molybdenum

(vii) Chlorine.





Incorrect



1/5

Q : The three elements needed for the healthy growth of plants are:

A

N,S,P

B

N,Ca,P

C

N,P,K

D

N,K,C

## Explanation

A nutrient which is required in large quantities for normal growth of plants is called macronutrient.

Examples:

(i) Nitrogen  
Calcium

(ii) Phosphorus

(iii) Potassium

(iv)

(v) Magnesium  
Hydrogen

(vi) Sulphur

(vii) Carbon

(viii)

(ix) Oxygen



Incorrect



2/5

Q : Macronutrient for soil is

A

 $N_2$ 

B

Cu

C

Zn

D

Fe

## Explanation

Nutrients which are required in small amount for normal growth of plants are called micronutrients.

### Examples:

(i) Boron  
Manganese

(ii) Copper

(iii) Iron

(iv)

(v) Zinc

(vi) Molybdenum

(vii) Chlorine.



Incorrect



3/5

Q : The elements which are essential for plant growth can be classified into



Three types



Four types



Two types



Five types

## Explanation

Elements required for the normal growth of plants are called **nutrients**. Plants need nutrients from the soil for the healthy growth.

### Types of nutrients:

(i) Micro nutrient

Macro nutrient



Q : The macronutrients for plant are those which

**A**

Are required in very large amount

**B**

Are produced from plants in very small amounts

**C**

Are required in very small amount

**D**

Retard the growth of plants

## Explanation

A nutrient which is required in large quantities for normal growth of plants is called macronutrient.

Examples:

(i) Nitrogen  
Calcium

(ii) Phosphorus

(iii) Potassium

(iv)

(v) Magnesium  
Hydrogen

(vi) Sulphur

(vii) Carbon

(viii)

(ix) Oxygen

***They are generally required in quantities ranging from 5kg to 200kg per acre of the land***



Incorrect



5/5

Q : Which of two non-metals are included in micronutrients



Carbon and Bromine



Hydrogen and oxygen



Boron and chlorine



Nitrogen and phosphorus

## Explanation

Nutrients which are required in small amount for normal growth of plants are called micronutrients.

### Examples:

(i) Boron  
Manganese

(ii) Copper

(iii) Iron

(iv)

(v) Zinc

(vi) Molybdenum

(vii) Chlorine.



## QUIZZES

### Practice Test 64



5 Questions



5 min

#### Topics

CLASSIFICATION OF FERTILIZERS, Nitrogenous fertilizers, Ammonia as a fertilizer, Urea, Ammonium nitrate

[Start Quiz](#)



1/5



5 min



Hint

Q : Ammonium nitrate fertilizer is not used for which crops?



Cotton



Wheat



Sugarcane



Paddy rice





2/5



5 min



Hint

Q : Which one of the following is a high quality nitrogenous fertilizer?



Ammonia



Urea



Ammonium nitrate



Ammonium sulphate





3/5



5 min



Hint

Q : Which fertilizer is used in liquid state?



Ammonium nitrate



Ammonia



Calcium ammonium sulphate



Ammonium phosphate



4/5



5 min



Hint

Q : Which one of the following fertilizers makes the soil acidic?



Calcium nitrate



Sodium nitrate



Potassium nitrate



Ammonium nitrate



5/5



5 min



Hint

Q : In evaporation chamber, water is removed from urea solution by heating it with



Steam at high pressure



Steam under vacuum



Steam at moderate pressure



Direct flame



Correct



Unattempted



Incorrect



1/5

Q : Ammonium nitrate fertilizer is not used for which crops?



Cotton



Wheat



Sugarcane



Paddy rice



Incorrect



2/5

Q : Which one of the following is a high quality nitrogenous fertilizer?



Ammonia



Urea



Ammonium nitrate



Ammonium sulphate

## Explanation

### Urea

- It is high quality nitrogenous fertilizer.
- It is most widely used nitrogen fertilizer in Pakistan.
- It is most concentrated solid nitrogen fertilizer.

### % of Nitrogen

It contains 46% nitrogen.



Correct



Unattempted



Incorrect



3/5

Q : Which fertilizer is used in liquid state?



Ammonium nitrate



Ammonia



Calcium ammonium sulphate



Ammonium phosphate



Correct



Unattempted



Incorrect



4/5

Q : Which one of the following fertilizers makes the soil acidic?



Calcium nitrate



Sodium nitrate



Potassium nitrate



Ammonium nitrate





Correct



Unattempted



Incorrect



5/5

Q : In evaporation chamber, water is removed from urea solution by heating it with



Steam at high pressure



Steam under vacuum



Steam at moderate pressure



Direct flame

## Explanation

The urea solution is concentrated in an evaporation section where water is evaporated by heating with steam under vacuum in two evaporation stages.







## QUIZZES

### Practice Test 65



5 Questions



5 min

#### Topics

Phosphatic fertilizers, Diammonium phosphate, Potassium fertilizers, Potassium nitrate, Fertilizers industries in Pakistan

[Start Quiz](#)



1/5



5 min



Hint

Q : Zones through which the charge passes in a rotary kiln



5



4



3



2



2/5



5 min



Hint

Q : The percentage of nitrogen in diammonium phosphate is



16%



20%



18%



48%



3/5



5 min



Hint

Q : Potassium is required for the formation of



Starch



Sugar



Fibrous material of the plant



All of above



4/5



5 min



Hint

Q : How many fertilizer plants in private as well as public sectors are manufacturing different types of fertilizers in the country?



12



14



10



16



5/5



5 min



Hint

Q : Potassium nitrate is obtained as



A Pale yellow solid



B White solid



C Bluish white solid



D Greenish blue solid



Q : Zones through which the charge passes in a rotary kiln

A

5

B

4

C

3

D

2

## Explanation

### (1) Drying or pre-heating Zone (minimum)/ temperature zone)

In this zone the temperature is kept at  $500^{\circ}\text{C}$ , where by the moisture is removed and the clay is broken into  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ , and  $\text{Fe}_2\text{O}_3$ .

### (2) Decomposition Zone (Moderate temperature zone)

In this zone the temperature goes upto  $1500^{\circ}\text{C}$ , In this zone the limestone ( $\text{CaCO}_3$ ) decomposes into lime ( $\text{CaO}$ ) and  $\text{CO}_2$ .



### (3) Burning Zone (Maximum temperature zone)

In this zone, the temperature goes up to  $1500^{\circ}\text{C}$  and the oxides, e.g.  $\text{CaO}$ ,  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$  and  $\text{Fe}_2\text{O}_3$  combine together and form calcium

B

4

C

3

D

2

## Explanation

### (1) Drying or pre-heating Zone (minimum)/ temperature zone)

In this zone the temperature is kept at  $500^{\circ}\text{C}$ , where by the moisture is removed and the clay is broken into  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ , and  $\text{Fe}_2\text{O}_3$ .

### (2) Decomposition Zone (Moderate temperature zone)

In this zone the temperature goes upto  $1500^{\circ}\text{C}$ , In this zone the limestone ( $\text{CaCO}_3$ ) decomposes into lime ( $\text{CaO}$ ) and  $\text{CO}_2$ .



### (3) Burning Zone (Maximum temperature zone)

In this zone, the temperature goes up to  $1500^{\circ}\text{C}$  and the oxides, e.g.  $\text{CaO}$ ,  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$  and  $\text{Fe}_2\text{O}_3$  combine together and form calcium silicate, calcium aluminate and calcium ferrite.

### (4) Cooling Zone

This is the last stage in the kiln where the charge is cooled up to  $150\text{--}200^{\circ}\text{C}$ .





Incorrect



2/5

Q : The percentage of nitrogen in diammonium phosphate is



16%



20%



18%



48%

## Explanation

### DIAMMONIUM PHOSPHATE $(\text{NH}_4)_2\text{HPO}_4$

- It contains about 75% plant nutrients.
- It is deemed suitable for use either alone or in mixed with other fertilizers.

#### % of Nitrogen

It contains 16% nitrogen.



Correct



Unattempted



Incorrect



3/5

Q : Potassium is required for the formation of



Starch



Sugar



Fibrous material of the plant



All of above



Correct



Unattempted



Incorrect



4/5

Q : How many fertilizer plants in private as well as public sectors are manufacturing different types of fertilizers in the country?



12



14



10



16

## Explanation

At present there are in about 14 fertilizers plants in private as well as public sector in the country which are manufacturing different types of fertilizers. The total production of urea fertilizer in 2002 in Pakistan is about 56,30,100 metric tons/annum.



Correct



Unattempted



Incorrect



5/5

Q : Potassium nitrate is obtained as



Pale yellow solid



White solid



Bluish white solid



Greenish blue solid

## Explanation

### Potassium Nitrate ( $\text{KNO}_3$ )

- It is pale yellow solid
- % of Nitrogen
- It contains 13% nitrogen

1

2

3

4

5



## QUIZZES

### Practice Test 66



5 Questions



5 min

#### Topics

CEMENT INDUSTRY, Raw material

[Start Quiz](#)



1/5



5 min



Hint

Q : One of the following is argillaceous material



Marble



Clay



Lime



Marine shell



2/5



5 min



Hint

Q : The percentage of silica ( $\text{SiO}_2$ ) in Portland cement is



12%



22%



32%



42%



3/5



5 min



Hint

Q : In what proportion powdered limestone and clay is mixed



A 35% limestone, 65% clay



B 65% limestone, 35% clay



C 55% limestone, 15% clay



D 75% limestone, 25% clay





4/5



5 min



Hint

Q : In which zone of rotary kiln decomposition of limestone takes place



Burning zone



Moderate temperature



Cooling zone



Drying or pre-heating zone



5/5



5 min



Hint

Q : In which zone of rotary kiln, the moisture is removed and the clay is broken into  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$  and  $\text{Fe}_2\text{O}_3$ ?



A Minimum temperature zone



B Drying zone



C Pre-heating zone



D All of given



Correct



Unattempted



Incorrect



1/5

Q : One of the following is argillaceous material



Marble



Clay



Lime



Marine shell



Correct



Unattempted



Incorrect



2/5

Q : The percentage of silica ( $\text{SiO}_2$ ) in Portland cement is



12%



22%



32%



42%





Correct



Unattempted



Incorrect



3/5

Q : In what proportion powdered limestone and clay is mixed



35% limestone, 65% clay



65% limestone, 35% clay



55% limestone, 15% clay



75% limestone, 25% clay





Correct



Unattempted



Incorrect



4/5

Q : In which zone of rotary kiln decomposition of limestone takes place



Burning zone



Moderate temperature



Cooling zone



Drying or pre-heating zone



Correct



Unattempted



Incorrect



5/5

Q : In which zone of rotary kiln, the moisture is removed and the clay is broken into  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$  and  $\text{Fe}_2\text{O}_3$ ?



Minimum temperature zone



Drying zone



Pre-heating zone



All of given





## QUIZZES

### Practice Test 67



5 Questions



5 min

#### Topics

Manufacturing process of cement, Wet process, Setting of cement, Cement industry in Pakistan

[Start Quiz](#)





1/5



5 min



Hint

Q : During the manufacturing process of cement the temperature of the decomposition zone goes up to



600°C



800°C



1000°C



1200°C



2/5



5 min



Hint

Q : How many zones through which the charge passes in a rotary kiln?



4



3



2



5



3/5



5 min



Hint

Q : The charge present in rotatory kiln completes journey in



2-3 hours



3-4 hours



4-5 hours



5-6 hours



4/5



5 min



Hint

Q : The production of cement per annum in Pakistan is



9578802 metric tons



8467701 metric tons



6356600 metric tons



5245500 metric tons



5/5



5 min



Hint

Q :  
A short time after the cement is mixed with water, tricalcium aluminate absorbs water and forms a colloidal gel of the composition

 $3\text{Ca} \cdot \text{Al}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$  $3\text{Ca} \cdot \text{Al}_2\text{O}_3 \cdot 4\text{H}_2\text{O}$  $3\text{Ca} \cdot \text{Al}_2\text{O}_3 \cdot 6\text{H}_2\text{O}$  $3\text{Ca} \cdot \text{Al}_2\text{O}_3 \cdot 8\text{H}_2\text{O}$



Correct



Unattempted



Incorrect



1/5

Q : During the manufacturing process of cement the temperature of the decomposition zone goes up to



600°C



800°C



1000°C



1200°C



Correct



Unattempted



Incorrect



2/5

Q : How many zones through which the charge passes in a rotary kiln?



4



3



2



5





Correct



Unattempted



Incorrect



3/5

Q : The charge present in rotatory kiln completes journey in



2-3 hours



3-4 hours



4-5 hours



5-6 hours





Correct



Unattempted



Incorrect



4/5

Q : The production of cement per anum in Pakistan is



9578802 metric tons



8467701 metric tons



6356600 metric tons



5245500 metric tons

## Explanation

At present there are 22 factories in private as well as public sector. Some of the factories work on the basis of wet process and other dry process. The total production of 22 cement plant is 9,578,802 metric tons / year.





Correct



Unattempted



Incorrect



5/5

Q :  
A short time after the cement is mixed with water, tricalcium aluminate absorbs water and forms a colloidal gel of the composition

 $3\text{Ca} \cdot \text{Al}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$  $3\text{Ca} \cdot \text{Al}_2\text{O}_3 \cdot 4\text{H}_2\text{O}$  $3\text{Ca} \cdot \text{Al}_2\text{O}_3 \cdot 6\text{H}_2\text{O}$  $3\text{Ca} \cdot \text{Al}_2\text{O}_3 \cdot 8\text{H}_2\text{O}$ 

## Explanation

A short time after the cement is mixed with water tri-calcium aluminate absorbs water (hydration) and forms a colloidal gel of the composition,  $3 \text{Ca} \cdot \text{Al}_2\text{O}_3 \cdot 6\text{H}_2\text{O}$ , (hydrated tricalcium aluminate)



## QUIZZES

### Practice Test 68



5 Questions



5 min

#### Topics

PAPER INDUSTRY, Early history, Definition

[Start Quiz](#)



1/5



5 min



Hint

Q : Which woody raw material is used for the manufacture of paper pulp?



Cotton



Bagasse



Poplar



Rice straw



2/5



5 min



Hint

Q : The word paper is derived from the name of which reedy plant



Rose



Sun flower



Papyrus



Water Hyacinth



3/5



5 min



Hint

Q : Essential steps for the manufacture of paper pulp and paper by NSSC are



Five



Two



Ten



One



4/5



5 min



Hint

Q : The oldest industry known to man is



Agriculture



Chemical



Cement



Metallurgy



5/5



5 min



Hint

Q : Essential steps for the manufacture of paper pulp and paper by NSSC are



Five



Two



Ten



One





Incorrect



1/5

Q : Which woody raw material is used for the manufacture of paper pulp?



Cotton



Bagasse



Poplar



Rice straw

## Explanation

### Non woody Raw Materials

- (i) Wheat straw  
Stalk
- (ii) Rice straw  
linter
- (iii) Bagasse  
grass
- (iv) Bamboo
- (v) Rag

(vi) Cotton

(vii) Cotton

(viii) Kahi

(ix) Grasses

### Woody Raw Materials

- (i) Poplar (hard wood)
- (ii) Eucalyptus (hard  
wood)
- (iii) Douglas fir (soft  
wood)





Correct



Unattempted



Incorrect



2/5

Q : The word paper is derived from the name of which reedy plant



Rose



Sun flower



Papyrus



Water Hyacinth

## Explanation

The word 'paper' is derived from the name of a reedy plant "Papyrus" which grow abundantly along the marshy delta of river Nile in Egypt around 3000 BC.



Correct



Unattempted



Incorrect



3/5

Q : Essential steps for the manufacture of paper pulp and paper by NSSC are



Five



Two



Ten



One

### Explanation

Essential steps for the manufacture of paper pulp and paper by NSSC are ten.



Correct



Unattempted



Incorrect



4/5

Q : The oldest industry known to man is



Agriculture



Chemical



Cement



Metallurgy

## Explanation

Agriculture is the oldest industry known to man. Early man used manure as a fertilizer in their fields.



Correct



Unattempted



Incorrect



5/5

Q : Essential steps for the manufacture of paper pulp and paper by NSSC are



Five



Two



Ten



One





## QUIZZES

### Practice Test 69



5 Questions



5 min

#### Topics

Pulping process, Neutral sulphite semi-chemical process-I, Neutral sulphite semi-chemical process-II

**Start Quiz**



1/5



5 min



Hint

Q : Which woody raw material is used for the manufacture of paper pulp?



Cotton



Bagasse



Poplar



Rice straw



2/5



5 min



Hint

Q : Woody Raw material for paper pulp is obtained from



Cotton



Bagasse



Douglas fir



Rice Straw





3/5



5 min



Hint

Q : In the dryer section water is separated from fibre by



Gravity



Suction



Pressing



All of the above



4/5



5 min



Hint

Q : Principal methods used for chemical pulping and production of paper pulps are



Kraft process



Sulphite process



Neutral sulphite semi-chemical process



All of the above



5/5



5 min



Hint

Q : Stock preparation is carried out in \_\_\_\_ steps



Five



Two



Ten



Three



Incorrect



1/5

Q : Which woody raw material is used for the manufacture of paper pulp?

A

Cotton

B

Bagasse

C

Poplar

D

Rice straw

## Explanation

### Non woody Raw Materials

- (i) Wheat straw  
Stalk
- (ii) Rice straw  
linter
- (iii) Bagasse  
grass
- (iv) Bamboo
- (v) Rag

(vi) Cotton

(vii) Cotton

(viii) Kahi

(ix) Grasses

### Woody Raw Materials

- (i) Poplar (hard wood)
- (ii) Eucalyptus (hard  
wood)
- (iii) Douglas fir (soft  
wood)



Incorrect



2/5

Q : Woody Raw material for paper pulp is obtained from



Cotton



Bagasse



Douglas fir



Rice Straw

## Explanation

### Non woody Raw Materials

- (i) Wheat straw Stalk
- (ii) Rice straw linter
- (iii) Bagasse grass
- (iv) Bamboo
- (v) Rag

### (vi) Cotton

### (vii) Cotton

### (viii) Kahi

### (ix) Grasses

### Woody Raw Materials

- (i) Poplar (hard wood)
- (ii) Eucalyptus (hard wood)
- (iii) Douglas fir (soft wood)



Correct



Unattempted



Incorrect



3/5

Q : In the dryer section water is separated from fibre by



Gravity



Suction



Pressing



All of the above

## Explanation

### Dryer Section

Wet sheet of paper so formed is dried in the dryer section of the machine with the help of rotary drum. Water is separated from the fibre either by gravity, by suction or by pressing and by heating.





Incorrect



4/5

Q : Principal methods used for chemical pulping and production of paper pulps are



Kraft process



Sulphite process



Neutral sulphite semi-chemical process



All of the above

## Explanation

The following are three principal methods of chemical pulping and are used for the production of paper pulps.

(1) Kraft process (Alkaline)

(2) Sulphite process (Acidic)

(3) Neutral sulphite semi-chemical process (NSSC)



Q : Stock preparation is carried out in \_\_\_\_ steps

A Five

B Two

C Ten

D Three

## Explanation

### Stock Preparation Plant

There are three important stages in the treatment of the pulp prior to its delivery to the paper making machine.

- (i) Dispersion of the pulp as slurry in water
- (ii) Mechanical refining or beating of the fibres to develop appropriate physical and mechanical properties.
- (iii) Addition of chemical additives
- (iv) Recycling of fibers from the waste paper plant.





## QUIZZES

### Practice Test 70



5 Questions



5 min

#### Topics

Environmental chemistry, Components  
of environment-I, Components of  
environment-II

[Start Quiz](#)



1/5



5 min



Hint

Q : That part of environment which consist of rocky crust of earth is called



Atmosphere



Lithosphere



Biosphere



None of given



2/5



5 min



Hint

Q : The element present in greatest proportion on earth crust is



Magnesium



Nitrogen



Oxygen



Iron



3/5



5 min



Hint

Q : The branch of chemistry which deals with the study of chemicals and other pollutants in the environment is called



Physical chemistry



Space chemistry



Environmental chemistry



Industrial chemistry



4/5



5 min



Hint

Q : The polar ice caps and glaciers consist of how much part of earth's total water supply



3%



2%



4 %



5%



5/5



5 min



Hint

Q : The fresh water which is being used by industry is



13%



33%



43%



23%



Incorrect



1/5

Q : That part of environment which consist of rocky crust of earth is called



Atmosphere



Lithosphere



Biosphere



None of given

## Explanation

The component of the environment which includes the region of earth capable of supporting life is called biosphere.

Biosphere consists of

(i) Lower atmosphere  
Rivers

(ii) Oceans

(iii)

(iv) Lakes

(v) Soils

(vi) Solid sediments





Q : The element present in greatest proportion on earth crust is

A

Magnesium

B

Nitrogen

C

Oxygen

D

Iron

## Explanation

They are the heavier interior of earth making up most of the earth's mass. 99.5% mass of lithosphere consists of eleven elements.

(i)	Na	=	2.83 %
(ii)	K	=	2.59 %
(iii)	Mg	=	2.09 %
(iv)	Ca	=	3.63 %
(v)	Al	=	8.13 %
(vi)	Si	=	27.72 %
(vii)	O <sub>2</sub>	=	46.6 %
(viii)	Fe	=	5 %



A Magnesium

B Nitrogen

C Oxygen

D Iron

## Explanation

They are the heavier interior of earth making up most of the earth's mass. 99.5% mass of lithosphere consists of eleven elements.

(i)	Na	=	2.83 %
(ii)	K	=	2.59 %
(iii)	Mg	=	2.09 %
(iv)	Ca	=	3.63 %
(v)	Al	=	8.13 %
(vi)	Si	=	27.72 %
(vii)	O <sub>2</sub>	=	46.6 %
(viii)	Fe	=	5 %
(ix)	Ti, H <sub>2</sub> and P	=	less than 1 %



Correct



Unattempted



Incorrect



3/5

Q : The branch of chemistry which deals with the study of chemicals and other pollutants in the environment is called



Physical chemistry



Space chemistry



Environmental chemistry



Industrial chemistry

## Explanation

The branch of chemistry which deals with the study of chemicals and other pollutants in the environment is called Environmental chemistry



Correct



Unattempted



Incorrect



4/5

Q : The polar ice caps and glaciers consist of how much part of earth's total water supply



3%



2%



4 %



5%

## Explanation

### Glaciers and polar Ice Caps:

They consist of 2% of the earth's total water.



Q : The fresh water which is being used by industry is

A 13%

B 33%

C 43%

D 23%

## Explanation

### Fresh water:

Only 1% of earth's total water which is fit for human use is called **fresh water**. The sources of fresh water are:

(i) Surface water      (ii) River      (iii) Lake      (iv) Stream      (v)  
Ground water

### Use of fresh water:

Fresh water is used for various purposes as follows:

(i)	Agriculture	69%
(ii)	Industry	23%
(iii)	Domestic	8%



## QUIZZES

### Practice Test 71



5 Questions



5 min

#### Topics

TYPES OF POLLUTION, Air pollution, Primary air pollutants-I, Primary air pollutants-II, Acid rain

[Start Quiz](#)



1/5



5 min



Hint

Q : Which is secondary pollutant?



Nitrogen Monoxide

 $\text{CO}_2$  $\text{SO}_2$ 

CO



2/5



5 min



Hint

Q : The pH of unpolluted rain water should be:



5.6



7.0



4.8



3.2



3/5



5 min



Hint

Q : Environmental pollution is spreading in almost every city of the world due to



Continuous rapid growth in population



Urbanization



Industrialization and transportation



All of these





4/5



5 min



Hint

Q : Which oxide of nitrogen is mainly produced by bacterial action



NO

 $\text{NO}_2$  $\text{N}_2\text{O}$  $\text{N}_2\text{O}_3$



5/5



5 min



Hint

Q : Coal contains Sulphur



1-3%



2 - 5%



1 - 9%



3 - 8%



Q : Which is secondary pollutant?

**A**

Nitrogen Monoxide

**B** $\text{CO}_2$ **C** $\text{SO}_2$ **D**

CO

## Explanation

### (i) Secondary Pollutants:

The primary pollutants in the atmosphere produce secondary pollutants through various reactions. These are follows:

(i) Sulphuric acid  
Carbonic acid

(ii) Nitrogen monoxide ( $\text{N}_2\text{O}$ )

(iii)

(iv) Hydrofluoric acid  
Ozone

(v) Peroxyacetyl nitrate (PAN)

(vi)

(vii) Aldehydes  
Peroxybenzol

(viii) Ketones

(ix)

All these compounds are toxic and their concentration in the atmosphere must be controlled.



Correct



Unattempted



Incorrect



2/5

Q : The pH of unpolluted rain water should be:



5.6



7.0



4.8



3.2

## Explanation

### pH of acid rain:

The pH of unpolluted rain water should be 5.6. The rain water having pH less than 5 is considered truly acidic.





Q : Environmental pollution is spreading in almost every city of the world due to

A

Continuous rapid growth in population

B

Urbanization

C

Industrialization and transportation

D

All of these

## Explanation

### Reasons for environmental Pollution:

Following are the factors which are responsible for environmental pollution.

- (i) Rapid growth of population
- (ii) Urbanization
- (iii) Industrialization
- (iv) Transportation



Correct



Unattempted



Incorrect



4/5

Q : Which oxide of nitrogen is mainly produced by bacterial action



NO

NO<sub>2</sub>N<sub>2</sub>ON<sub>2</sub>O<sub>3</sub>

## Explanation

### Natural:

Bacterial action produces NO<sub>x</sub> mainly NO.





Correct



Unattempted



Incorrect



5/5

Q : Coal contains Sulphur



1-3%



2 - 5%



1 - 9%



3 - 8%

## Explanation

### Human Activities:

(i) Combustion of coal which contains 1–9% sulphur.

(ii) Burning of crude oil

Burning of fossil fuel in power plants and petroleum industry.





## QUIZZES

### Practice Test 72



5 Questions



5 min

#### Topics

Smog, Ozone, Role of CFCs in destroying ozone, Water pollution -I, Water pollution -II

[Start Quiz](#)





1/5



5 min



Hint

Q : A single chloride free radical can destroy how many ozone molecules



100



100000



10000



10



2/5



5 min



Hint

Q : The main pollutant of leather tanneries in the waste water is due to the salts of



Lead



Chromium (VI)



Copper



Chromium (III)



3/5



5 min



Hint

Q : The normal amount of overhead ozone is about



150 DU



250 DU



350 DU



450 DU



4/5



5 min



Hint

Q : Detergent greatly affect:



Aquatic life



Modern life



Terrestrial life



Plant's life



5/5



5 min



Hint

Q : The main reactants of photochemical smog are



A  $\text{SO}_2$  and NO



B  $\text{SO}_2$  and unburnt hydrocarbons



C NO and unburnt hydrocarbons



D  $\text{SO}_3$  and  $\text{NO}_2$



Correct



Unattempted



Incorrect



1/5

Q : A single chloride free radical can destroy how many ozone molecules



100



100000



10000



10

## Explanation

A single chloride free radical can destroy upto 100,000 ozone molecules.





Correct



Unattempted



Incorrect



2/5

Q : The main pollutant of leather tanneries in the waste water is due to the salts of



Lead



Chromium (VI)



Copper



Chromium (III)





Correct



Unattempted



Incorrect



3/5

Q : The normal amount of overhead ozone is about



150 DU



250 DU



350 DU



450 DU

## Explanation

### Units of ozone measurement:

The amount of ozone in the atmosphere is expressed in Dobson units (DU). The normal amount of overhead ozone is about 350 DU.







Correct



Unattempted



Incorrect



4/5

Q : Detergent greatly affect:



Aquatic life



Modern life



Terrestrial life



Plant's life

## Explanation

Detergents are excessively used in industries and household as cleaning agents. The amount of detergents being released in waste water is increasing day by day. This waste water when discharged in rivers or sea greatly affects the aquatic life.





Correct



Unattempted



Incorrect



5/5

Q : The main reactants of photochemical smog are

 $\text{SO}_2$  and NO $\text{SO}_2$  and unburnt hydrocarbons

NO and unburnt hydrocarbons

 $\text{SO}_3$  and  $\text{NO}_2$ 

## Explanation

Oxidizing smog is formed in the presence of water droplets and chemical reactions of pollutants in the air. The main reactants of photochemical smog are nitric oxide, NO and unburnt hydrocarbons. NO is oxidized to  $\text{NO}_2$  within minutes to hours depending upon the concentration of pollutant gas.



## QUIZZES

### Practice Test 73



5 Questions



5 min

Topics

DO, BOD and COD

[Start Quiz](#)



1/5



5 min



Hint

Q : Chemical oxygen demand of water (COD) is measured by reacting water with

A Permanganate ion ( $\text{MnO}_4^{-1}$ )B Chromate ion ( $\text{CrO}_4^{2-}$ )C Dichromate ion ( $\text{Cr}_2\text{O}_7^{2-}$ )D Sulphate ion ( $\text{SO}_4^{2-}$ )



2/5



5 min



Hint

Q : Water is considered as polluted when amount of dissolved oxygen is less than



2ppm



6ppm



4ppm



8ppm



3/5



5 min



Hint

Q : Amount of dissolved oxygen in water ranges from



3-7ppm



4-8 ppm



5-9 ppm



2-6ppm



4/5



5 min



Hint

Q : Oxygen demand of water can be determined directly by treating it with



Manganate ion



Dichromate ion



Chlorate ion



Both 'a' and 'b'



5/5



5 min



Hint

Q : Higher value of which indicate more pollution



COD



BOD



DO



Both 'a' and 'b'





Correct



Unattempted



Incorrect




1/5

Q : Chemical oxygen demand of water (COD) is measured by reacting water with

Permanganate ion ( $\text{MnO}_4^{-1}$ )Chromate ion ( $\text{CrO}_4^{2-}$ )Dichromate ion ( $\text{Cr}_2\text{O}_7^{2-}$ )Sulphate ion ( $\text{SO}_4^{2-}$ )

## Explanation

### Measurement of COD

The oxygen demand of water can be determined directly by treating it with dichromate ions  which is a powerful oxidizing agent. The organic matter in water is oxidized, while the remaining dichromate is determined by titration.





Correct



Attempted



Incorrect



2/5

Q : Water is considered as polluted when amount of dissolved oxygen is less than



2ppm



6ppm



4ppm



8ppm

## Explanation

### DISSOLVED OXYGEN (DO)

The most important oxidizing agent in water is dissolved molecular oxygen ( $O_2$ ). Its concentration varies from 4-8 ppm. The organic matter which is present in polluted water is oxidized by this oxygen. The dissolved oxygen value less than 4 ppm shows that water is polluted.





Correct



Unattempted



Incorrect



3/5

Q : Amount of dissolved oxygen in water ranges from



3-7ppm



4-8 ppm



5-9 ppm



2-6ppm

## Explanation

The most important oxidizing agent in water is dissolved molecular oxygen ( $O_2$ ). Its concentration varies from 4-8 ppm.



Correct



Unattempted



Incorrect



4/5

Q : Oxygen demand of water can be determined directly by treating it with



Manganate ion



Dichromate ion




Chlorate ion



Both 'a' and 'b'

## Explanation

The oxygen demand of water can be determined directly by treating it with dichromate ions  which is a powerful oxidizing agent.





Correct



Unattempted



Incorrect



5/5

Q : Higher value of which indicate more pollution



COD



BOD



DO



Both 'a' and 'b'

## Explanation

The value of COD and BOD is a direct measure of chemically oxidizable matter in water.

Higher values of COD will indicate more pollution.



## QUIZZES

### Practice Test 74



5 Questions



5 min

#### Topics

Aeration in water, Coagulation, Water  
disinfection by chlorine

[Start Quiz](#)



1/5



5 min



Hint

Q : To avoid the formation of toxic compounds with chlorine which substance is used for disinfection of water

KMnO<sub>4</sub>O<sub>3</sub>

Alums



Chloramines





2/5



5 min



Hint

Q : In purification of potable water, the coagulant used is:



Nickel sulphate



Copper sulphate



Alum



Barium sulphate





3/5



5 min



Hint

Q : The quality of raw water is improved by



Reduction



Aeration



Dehydration



Incineration



4/5



5 min



Hint

Q : How much, suspended particles can be removed by coagulation process



More than 60%



More than 90%



More than 80%



More than 70%



5/5



5 min



Hint

Q : In human, liver cancer is due to



Oxygen



Chloroform



Carbon dioxide



Methane



Correct



Unattempted



Incorrect



1/5

Q : To avoid the formation of toxic compounds with chlorine which substance is used for disinfection of water

 $\text{KMnO}_4$  $\text{O}_3$ 

Alums



Chloramines



Correct



Unattempted



Incorrect



2/5

Q : In purification of potable water, the coagulant used is:



Nickel sulphate



Copper sulphate



Alum



Barium sulphate





Correct



Unattempted



Incorrect



3/5

Q : The quality of raw water is improved by



Reduction



Aeration



Dehydration



Incineration





Correct



Unattempted



Incorrect



4/5

Q : How much, suspended particles can be removed by coagulation process



More than 60%



More than 90%



More than 80%



More than 70%





Correct



Unattempted



Incorrect



5/5

Q : In human, liver cancer is due to



Oxygen



Chloroform



Carbon dioxide



Methane







## QUIZZES

### Practice Test 75



5 Questions



5 min

#### Topics

Treatment of industrial waste, Incineration of industrial and hazardous wastes, Recycling of wastes

[Start Quiz](#)



1/5



5 min



Hint

Q : How many times the newspaper can be recycled?



3



5



4



2



2/5



5 min



Hint

Q : The temperature rang in non-rotating chamber in the incineration if industrial and hazardous waste process is



900–1000°C



250–500°C



950–1300°C



500–900°C



3/5



5 min



Hint

Q : Which are carcinogenic class of compounds



Dioxin



Lower alkanes



Fatty acids



Proteins



4/5



5 min



Hint

Q : The residual ash after incineration of industrial waste is disposed of in a landfill, which is lined with



Portland cement



Clay and plastic



Methyl silicone



Stone-ware



5/5



5 min



Hint

Q : Polythene terephthalate can be recycled by



Reprocessing



Depolymerization



Transformation



All of these



Correct



Unattempted



Incorrect



1/5

Q : How many times the newspaper can be recycled?



3



5



4



2





Correct



Unattempted



Incorrect



2/5

Q : The temperature rang in non-rotating chamber in the incineration if industrial and hazardous waste process is



900–1000°C



250–500°C



950–1300°C



500–900°C







Correct



Unattempted



Incorrect



3/5

Q : Which are carcinogenic class of compounds



Dioxin



Lower alkanes



Fatty acids



Proteins





Correct



Unattempted



Incorrect



4/5

Q : The residual ash after incineration of industrial waste is disposed of in a landfill, which is lined with



Portland cement



Clay and plastic



Methyl silicone



Stone-ware





Correct



Unattempted



Incorrect



5/5

Q : Polythene terephthalate can be recycled by



Reprocessing



Depolymerization



Transformation



All of these





## QUIZZES

### Practice Test 76



5 Questions



5 min

#### Topics

INTRODUCTION, Historical background,  
Improvement in Mendeleev's periodic law

[Start Quiz](#)



1/5



5 min



Hint

Q : Atomic mass of Na is average of masses of Li and K. These three elements constitute



Alkaline earth metals



Triad



Octave



Homologous series



2/5



5 min



Hint

Q : In series of Newland's octave, number of elements present are



3



7



8



Not fixed



3/5



5 min



Hint

Q : Number of groups and periods in the Mendeleeev's periodic table are



8 and 12



7 and 11



8 and 11



8 and 7



4/5



5 min



Hint

Q : Mendeleev's periodic law was based on



Proton number



Nucleon number



Charge number



Oxidation number





5/5



5 min



Hint

Q : The number of isotopes of gold is /are



1



2



3



4



Correct



Unattempted



Incorrect



1/5

Q : Atomic mass of Na is average of masses of Li and K. These three elements constitute



Alkaline earth metals



Triad



Octave



Homologous series

## Explanation

### (1) Dobereiner's classification;

In 1829, he arranged the elements having similar properties in triads. Triad is a group of three elements in which atomic mass of middle element is the average of the atomic masses of first and third element. This principle is called **Law of Triads**.





Incorrect



2/5

Q : In series of Newland's octave, number of elements present are

A

3

B

7

C

8

D

Not fixed

## Explanation

### (1) Newland's Classification;

In 1864, he classified 62 elements in the increasing order of their atomic masses. Some properties of every eighth element is similar to that of first one. This is called **Law of octaves**.

Li	Be	B	C	N	O	F
Na	Mg	Al	Si	P	S	Cl

1

2

3

4

5





Incorrect



3/5

Q : Number of groups and periods in the Mendeleev's periodic table are



8 and 12



7 and 11



8 and 11



8 and 7

## Explanation

### Groups:

The vertical columns were called as groups. They were eight in number. He classified the elements of similar chemical properties in one group.

### Periods;

The horizontal rows were called as periods. They were twelve in number.

1

2

3

4

5





Correct



Unattempted



Incorrect



4/5

Q : Mendeleev's periodic law was based on



Proton number



Nucleon number



Charge number



Oxidation number

## Explanation

### Periodic law:

The properties of elements are the periodic function (repeated after regular interval of time) of their atomic masses.





Correct



Unattempted



Incorrect



5/5

Q : The number of isotopes of gold is /are



1



2



3



4

## Explanation

Gold is mono isotopic element which contain only one isotope





## QUIZZES

### Practice Test 77



5 Questions



5 min

#### Topics

THE MODERN PERIODIC TABLE, Groups and periods, Some more families in periodic table, Metals, non-metals and metalloids

[Start Quiz](#)



1/5



5 min



Hint

Q : Most of the elements in the periodic table are



Metals



Non-metals



Transition metals



Inner transition metals





2/5



5 min



Hint

Q : The element with  $Z = 24$  is placed in the period



5



2



4



3



3/5



5 min



Hint

Q : Which of the following group of elements is called coinage metals?



Cu, Ag, Au



Zn, Cd, Hg



Sc, Y, La



Ca, Sr, Ba



4/5



5 min



Hint

Q : The element with  $Z = 30$  is expected to be present in group:



II-B



I-B



II-A



I-A



5/5



5 min



Hint

Q : Which is non-metal:



Sb



Cu



Ag



Br



Correct



Unattempted



Incorrect



1/5

Q : Most of the elements in the periodic table are



Metals



Non-metals



Transition metals



Inner transition metals

## Explanation

There is 91 metals in periodic table and 17 non metals and 6 metalloids





Correct



Unattempted



Incorrect



2/5

Q : The element with  $Z = 24$  is placed in the period



5



2



4



3

### Explanation

The element with atomic number 24 is copper and which belong to third period





Correct



Unattempted



Incorrect



3/5

Q : Which of the following group of elements is called coinage metals?



Cu, Ag, Au



Zn, Cd, Hg



Sc, Y, La



Ca, Sr, Ba

## Explanation

The 1-B group is called coinage metal which consist silver, copper, and gold elements



Correct



Unattempted



Incorrect



4/5

Q : The element with  $Z = 30$  is expected to be present in group:



II-B



I-B



II-A



I-A

## Explanation

The element having atomic number 30 is zinc which belong to II-B group







Correct



Unattempted



Incorrect



5/5

Q : Which is non-metal:



Sb



Cu



Ag



Br

## Explanation

Ag and Cu are metals, Sb is metalloid and Br is a non metal





## QUIZZES

### Practice Test 78



5 Questions



5 min

#### Topics

Atomic radius, Ionic radius, Ionization energy  
- Variation within a group and period,  
Electron affinity

[Start Quiz](#)



1/5



5 min



Hint

Q : Which is not the periodic property:



Ionization energy



Density



Atomic radius



Nucleon number



2/5



5 min



Hint

Q : Correct increasing order of following species is H,  $H^+$ ,  $H^-$

 $H < H^+ < H^-$  $H^+ < H^- < H$  $H^+ < H < H^-$  $H^- > H > H^+$



3/5



5 min



Hint

Q : Ionization energy of nitrogen is higher than that of oxygen because of:



A Greater penetration effect



B The half-filled p-orbitals of nitrogen possess extra stability



C The size of nitrogen atom being smaller



D Greater attraction of electrons by the nucleus



4/5



5 min



Hint

Q : When an atom of high electronegative element becomes an ion, then which of the following occurs:



A Its ionic radius becomes smaller



B Its ionic radius becomes larger



C It loses electrons



D It acts as reducing agent



5/5



5 min



Hint

Q : Which of the following group show abnormal behaviour of electron affinity?



II-A



V-A



VIII-A



All of these



Correct



Unattempted



Incorrect



1/5

Q : Which is not the periodic property:



Ionization energy



Density



Atomic radius



Nucleon number

## Explanation

The periodic table is arranged according to periodic properties in terms of **ionization energy, electronegativity, atomic radius, electron affinity**, and metallic character. The periodic table arranges the elements by periodic properties, which are recurring trends in physical and chemical characteristics and density is not a periodic property







Correct



Unattempted



Incorrect



2/5

Q : Correct increasing order of following species is  $H$ ,  $H^+$ ,  $H^-$

 $H < H^+ < H^-$  $H^+ < H^- < H$  $H^+ < H < H^-$  $H^- > H > H^+$ 

## Explanation

Cation is always smaller than neutral atoms and anion is always larger than neutral atoms





Correct



Unattempted



Incorrect



3/5

Q : Ionization energy of nitrogen is higher than that of oxygen because of:



Greater penetration effect



The half-filled p-orbitals of nitrogen possess extra stability



The size of nitrogen atom being smaller



Greater attraction of electrons by the nucleus

## Explanation

Any element have half filled P subshell will be most stable as compare to other elements. So, ionization energy of nitrogen is higher than that of oxygen because of the half-filled p-orbitals of nitrogen possess extra stability



Correct



Unattempted



Incorrect



4/5

Q : When an atom of high electronegative element becomes an ion, then which of the following occurs:



A Its ionic radius becomes smaller



B Its ionic radius becomes larger



C It loses electrons



D It acts as reducing agent

## Explanation

By addition of electron in neutral atom the force of repulsion between electron is increases and force of attraction of nucleus on electron will be decreases that's why size of anion will be larger than neutral atom





Correct



Unattempted



Incorrect



5/5

Q : Which of the following group show abnormal behaviour of electron affinity?



II-A



V-A



VIII-A



All of these

## Explanation

IIA, VA, and VIIIA and normal behaviour of electron affinity



## QUIZZES

### Practice Test 79



5 Questions



5 min

#### Topics

Melting points - Variation in groups and periods, Hydration energy

[Start Quiz](#)



1/5



5 min



Hint

Q : Maximum hydration energy is possessed by

 $\text{Na}^+$  $\text{Mg}^{+2}$  $\text{Al}^{+3}$  $\text{K}^+$



2/5



5 min



Hint

Q : Which of the following ion has maximum hydration energy?

 $\text{Li}^+$  $\text{Na}^+$  $\text{K}^+$  $\text{Ca}^{+2}$



3/5



5 min



Hint

Q : Which elements has lowest melting point



Beryllium



Magnesium



Silicon



Barium





4/5



5 min



Hint

Q : Across a period from left to right in the periodic table, the melting and boiling point.



Decreases



Increases



Remains constant



First increases upto the middle of period and then decreases



5/5



5 min



Hint

Q : Mark the correct statement:



Melting points of halogens decrease down the group



Melting points of halogens increase down the group



Melting points of halogens remain the same throughout the group



Melting points of halogens first increase and then decrease down the group



Correct



Unattempted



Incorrect



1/5

Q : Maximum hydration energy is possessed by

 $\text{Na}^+$  $\text{Mg}^{+2}$  $\text{Al}^{+3}$  $\text{K}^+$ 

## Explanation

Hydration energy is depends upon charge density  $\text{Al}^{+3}$  have high charge density



Q : Which of the following ion has maximum hydration energy?

A  $\text{Li}^+$

B  $\text{Na}^+$

C  $\text{K}^+$

D  $\text{Ca}^{+2}$

## Explanation

Hydration energy depends upon charge density,  $\text{Ca}^{+2}$  have high charge density

Ion	$\text{DH}_h$ $\text{kJ mole}^{-1}$
$\text{Li}^+$	
$\text{Na}^+$	-510
	-410
$\text{K}^+$	-336
$\text{Mg}^{2+}$	-1903
$\text{Ca}^{2+}$	-1591
$\text{Al}^{3+}$	-4613
$\text{F}^-$	-431
	-313
$\text{Cl}^-$	-284
$\text{Br}^-$	-247
$\text{I}^-$	



Correct



Unattempted



Incorrect



3/5

Q : Which elements has lowest melting point



Beryllium



Magnesium



Silicon



Barium

## Explanation

Magnesium have lowest melting point due to close haxagonal packing





Correct



Unattempted



Incorrect



4/5

Q : Across a period from left to right in the periodic table, the melting and boiling point.



Decreases



Increases



Remains constant



First increases upto the middle of period and then decreases

## Explanation

Melting point of element increasing up to group IV-A and decreasing up to noble gases





Correct



Unattempted



Incorrect



5/5

Q : Mark the correct statement:



Melting points of halogens decrease down the group



Melting points of halogens increase down the group



Melting points of halogens remain the same throughout the group



Melting points of halogens first increase and then decrease down the group



## QUIZZES

### Practice Test 80



5 Questions



5 min

Topics

Hydrides, Oxides

Start Quiz





1/5



5 min



Hint

Q : Basic nature of oxides decreases:



When we move from right to left in a period



When we move down the group



When we move upward the group



None of these



2/5



5 min



Hint

Q : Which one of the following is most acidic?

 $\text{Cl}_2\text{O}$  $\text{ClO}_2$  $\text{Cl}_2\text{O}_5$  $\text{Cl}_2\text{O}_7$



3/5



5 min



Hint

Q : Zinc oxide is an example of



Acidic oxide



Basic oxide



Amphoteric oxide



Neutral



4/5



5 min



Hint

Q : The nature of hydrides of alkali metals is:



Interstitial hydrides



Covalent hydrides



Metal hydrides



Ionic hydrides



5/5



5 min



Hint

Q : Which of the following elements form acidic oxide only



Cd



Al



Sn



Br



Correct



Unattempted



Incorrect



1/5

Q : Basic nature of oxides decreases:



A When we move from right to left in a period



B When we move down the group



C When we move upward the group



D None of these

## Explanation

The basic character of metal oxide increases on descending the group of period table



Correct



Unattempted



Incorrect



2/5

Q : Which one of the following is most acidic?

 $\text{Cl}_2\text{O}$  $\text{ClO}_2$  $\text{Cl}_2\text{O}_5$  $\text{Cl}_2\text{O}_7$ 

## Explanation

The acidic character increases with increasing oxidation state





Correct



Unattempted



Incorrect



3/5

Q : Zinc oxide is an example of



Acidic oxide



Basic oxide



Amphoteric oxide



Neutral

## Explanation

ZnO are amphoteric and behave as acid towards strong base and base towards strong acid







Correct



Unattempted



Incorrect



4/5

Q : The nature of hydrides of alkali metals is:



Interstitial hydrides



Covalent hydrides



Metal hydrides



Ionic hydrides

## Explanation

The element of alkali metal and the heavier member of alkaline earth metal is ionic hydrides because of high electronegativity difference.



Correct



Unattempted



Incorrect



5/5

Q : Which of the following elements form acidic oxide only



Cd



Al



Sn



Br

## Explanation

Bromine is non metal so its form is acetic oxide



**USAMA SOHAIL**

**SAEED MDCAT**

SAEED MDCAT TEAM

 SAEEDMDCAT



1/5



5 min



Hint

Q : Which of the following compound is formed when sodium burns in air:

 $\text{NaO}_2$  $\text{Na}_2\text{O}_2$  $\text{Na}_2\text{O}$  $\text{Na}_2\text{O}_3$



2/5



5 min



Hint

Q : Point out the ore of potassium?



Dolomite



Cryolite



Bauxite



Carnallite



3/5



5 min



Hint

Q : Alkali metals are included in the category of:



Noble gases



Transition elements



Inner transition elements



Representative elements



4/5



5 min



Hint

Q : Which of the following configuration correspond to alkaline earth metals?

 $[\text{Ar}] 3d^{10} 4s^2$  $[\text{Ne}] 3d^2 3p^2$  $[\text{Ar}] 4s^2$  $[\text{Ar}] 3d^{10} 4s^1$



5/5



5 min



Hint

Q :

Natron has the chemical formula

 $\text{NaNO}_3$  $\text{KNO}_3$  $\text{Na}_2\text{B}_4\text{O}_7$  $\text{Na}_2\text{CO}_3, \text{H}_2\text{O}$





Correct



Unattempted



Incorrect




1/5

Q : Which of the following compound is formed when sodium burns in air:

 $\text{NaO}_2$  $\text{Na}_2\text{O}_2$  $\text{Na}_2\text{O}$  $\text{Na}_2\text{O}_3$ 

## Explanation

- In the presence of excess of oxygen, Sodium forms **peroxide**,  $\text{Na}_2\text{O}_2$  (Pale yellow).

$2\text{Na} + \text{O}_2$  (excess)   $\text{Na}_2\text{O}_2$  (Sodium peroxide, pale yellow)



Correct



Unattempted



Incorrect



2/5

Q : Point out the ore of potassium?



Dolomite



Cryolite



Bauxite



Carnallite

## Explanation

Carnallite is the mineral of potassium and its formula is  $\text{KCl} \cdot \text{MgCl}_2 \cdot 6\text{H}_2\text{O}$





Correct



Unattempted



Incorrect



3/5

Q : Alkali metals are included in the category of:



Noble gases



Transition elements



Inner transition elements



Representative elements

## Explanation

In chemistry and atomic physics, the main group is the group of elements whose lightest members are represented by helium, lithium, beryllium, boron, carbon, nitrogen, oxygen, and fluorine as arranged in the periodic table of the elements. The main group includes the elements in groups 1 and 2, and groups 13 to 18.



Correct



Unattempted



Incorrect



4/5

Q : Which of the following configuration correspond to alkaline earth metals?

 $[\text{Ar}] 3d^{10} 4s^2$  $[\text{Ne}] 3d^2 3p^2$  $[\text{Ar}] 4s^2$  $[\text{Ar}] 3d^{10} 4s^1$ 

## Explanation

- Alkaline earth metals have two electrons in the 's' orbital of their valence shell ( $ns^2$ ).
- All alkaline earth metals lose their two electrons to form dipositive ions ( $M^{+2}$ ), because their ionization energies are low. eg.  $M \rightarrow M^{+2} + 2e^-$



Correct



Unattempted



Incorrect



5/5

Q :

Natron has the chemical formula

 $\text{NaNO}_3$  $\text{KNO}_3$  $\text{Na}_2\text{B}_4\text{O}_7$  $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$ 

## Explanation

Neutron is a mineral of sodium and its chemical formula is  $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$



## QUIZZES

### Practice Test 82



5 Questions



5 min

#### Topics

Occurrence of alkaline earth metals, Peculiar behavior of lithium

[Start Quiz](#)



1/5



5 min



Hint

Q : Which one of the followings is formula of asbestos?

 $\text{MgCO}_3$  $\text{MgCO}_3 \cdot \text{CaCO}_3$  $\text{CaMg}_3(\text{SiO}_3)_4$  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$





2/5



5 min



Hint

Q :  $\text{KCl} \cdot \text{MgCl}_2 \cdot 6\text{H}_2\text{O}$  is commonly called as:



Alunite



Carnallite



Dolomite



Magnesite





3/5



5 min



Hint

Q : An example of oxide of beryllium ore is



Asbestos



Dolomite



Chrysoberyl



Gypsum



4/5



5 min



Hint

Q : Chemical formula of magnesite is

 $\text{CaMg}_3(\text{SiO}_3)_4$  $\text{MgCO}_3$  $\text{MgSO}_4$  $\text{MgCl}_2$



5/5



5 min



Hint

Q : The heat of solution of lithium chloride is.



+ve



-ve



Negligible



Zero



Correct



Unattempted



Incorrect



1/5

Q : Which one of the followings is formula of asbestos?

 $\text{MgCO}_3$  $\text{MgCO}_3 \cdot \text{CaCO}_3$  $\text{CaMg}_3(\text{SiO}_3)_4$  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ 

## Explanation

Asbestos is a mineral of magnesium and its chemical formula is  $\text{CaMg}_3(\text{SiO}_3)_4$





Correct



Unattempted



Incorrect



2/5

Q :  $\text{KCl.MgCl}_2.6\text{H}_2\text{O}$  is commonly called as:



Alunite



Carnallite



Dolomite



Magnesite

## Explanation

Carnallite is a mineral of magnesium and its chemical formula is  $\text{KCl.MgCl}_2.6\text{H}_2\text{O}$



Correct



Unattempted



Incorrect



3/5

Q : An example of oxide of beryllium ore is



Asbestos



Dolomite



Chrysoberyl



Gypsum

## Explanation

Chrysoberyl is a oxide of Bryllium ore and its chemical formula is  $\text{Al}_2\text{BeO}_4$



Correct



Unattempted



Incorrect



4/5

Q : Chemical formula of magnesite is

 $\text{CaMg}_3(\text{SiO}_3)_4$  $\text{MgCO}_3$  $\text{MgSO}_4$  $\text{MgCl}_2$ 

### Explanation

Chemical formula of magnesite is  $\text{MgCO}_3$



Correct



Unattempted



Incorrect



5/5

Q : The heat of solution of lithium chloride is.



+ve



-ve



Negligible



Zero

## Explanation

Lithium Chloride has an exothermic heat of solution whereas other alkali metal Chlorides have an endothermic heat of solution.





## QUIZZES

### Practice Test 83



5 Questions



5 min

#### Topics

INTRODUCTION, Electronic configuration and physical properties of group VA elements

[Start Quiz](#)



1/5



5 min



Hint

Q : The outermost electronic configuration of group V-A elements is:

 $ns^1 np^3$  $ns^2 np^1$  $ns^2 np^2$  $ns^2 np^3$



2/5



5 min



Hint

Q : Among group V-A elements, the most electronegative element is



Sb



N



P



As



3/5



5 min



Hint

Q : Out of all the elements of group V-A, the highest ionization energy is possessed by



N



P



Sb



Bi



4/5



5 min



Hint

Q : Out of all the elements of group V-A, the highest ionization energy is possessed by



N



P



Sb



Bi



5/5



5 min



Hint

Q : Out of all the elements of group VA the highest ionization energy is possessed by



N



P



Sb



Bi



Correct



Unattempted



Incorrect



1/5

Q : The outermost electronic configuration of group V-A elements is:

 $ns^1 np^3$  $ns^2 np^1$  $ns^2 np^2$  $ns^2 np^3$



Correct



Unattempted



Incorrect



2/5

Q : Among group V-A elements, the most electronegative element is



Sb



N



P



As







Correct



Unattempted



Incorrect



3/5

Q : Out of all the elements of group V-A, the highest ionization energy is possessed by



N



P



Sb



Bi



Correct



Unattempted



Incorrect



4/5

Q : Out of all the elements of group V-A, the highest ionization energy is possessed by



N



P



Sb



Bi





Correct



Unattempted



Incorrect



5/5

Q : Out of all the elements of group VA the highest ionization energy is possessed by



N



P



Sb



Bi





## QUIZZES

### Practice Test 84



12 Questions



5 min

Topics

NITROGEN AND ITS COMPOUNDS

[Start Quiz](#)



1/12



5 min



Hint

Q : Which one is the neutral oxide?

 $\text{N}_2\text{O}$  $\text{N}_2\text{O}_4$  $\text{N}_2\text{O}_3$  $\text{N}_2\text{O}_5$



2/12



5 min



Hint

Q : The anhydride of nitric acid is:

 $N_2O_4$  $N_2O_3$  $N_2O_5$ 

NO



3/12



5 min



Hint

Q : Which of the following oxides of nitrogen is a brown coloured gas?

 $\text{N}_2\text{O}_5$  $\text{N}_2\text{O}$  $\text{N}_2\text{O}_3$  $\text{NO}_2$



4/12



5 min



Hint

Q : Nitrogen dioxide is released by heating:

 $\text{NaNO}_3$  $\text{Pb}(\text{NO}_3)_2$  $\text{KNO}_3$  $\text{NaNO}_2$





5/12



5 min



Hint

Q : Which of the following metals gives  $H_2$  gas with  $HNO_3$ ?



Mercury



Copper



Magnesium



Zinc



6/12



5 min



Hint

Q : Which of the following is not an oxide of Nitrogen:

 $\text{N}_2\text{O}$  $\text{N}_2\text{O}_3$  $\text{N}_3\text{O}_5$  $\text{N}_2\text{O}_5$



7/12



5 min



Hint

Q : In living matter, nitrogen is not found in the form of:



Protein



Carbohydrates



Urea



Amino acids



8/12



5 min



Hint

Q :  $\text{N}_2\text{O}$  is reduced to nitrogen on passing over:



Red hot iron



Red hot copper



Phosphorus



Lead



9/12



5 min



Hint

Q : Phosphorous burns in  $\text{NO}_2$  releasing.



NO

 $\text{N}_2\text{O}_3$  $\text{O}_2$  $\text{N}_2$



10/12



5 min



Hint

Q : Which of the following does not react with  $\text{HNO}_3$ ?



Gold



Plati0num



Titanium



All above



11/12



5 min



Hint

Q : Colour of liquid  $\text{N}_2\text{O}_4$  is:



White



Pale yellow



Reddish brown



Violet



12/12



5 min



Hint

Q :  $\text{N}_2\text{O}_4$  on heating upto  $620^\circ\text{C}$ , decomposes to generate

 $\text{N}_2$  &  $\text{O}_2$  $\text{NO}_2$  &  $\text{O}_2$  $\text{NO}$  &  $\text{O}_2$  $\text{N}_2\text{O}_3$  &  $\text{O}_2$





Correct



Unattempted



Incorrect



1/12

Q : Which one is the neutral oxide?

 $\text{N}_2\text{O}$  $\text{N}_2\text{O}_4$  $\text{N}_2\text{O}_3$  $\text{N}_2\text{O}_5$ 



Correct



Unattempted



Incorrect



2/12

Q : The anhydride of nitric acid is:

 $\text{N}_2\text{O}_4$  $\text{N}_2\text{O}_3$  $\text{N}_2\text{O}_5$ 

NO





Correct



Unattempted



Incorrect



3/12

Q : Which of the following oxides of nitrogen is a brown coloured gas?

 $\text{N}_2\text{O}_5$  $\text{N}_2\text{O}$  $\text{N}_2\text{O}_3$  $\text{NO}_2$ 



Correct



Unattempted



Incorrect



4/12

Q : Nitrogen dioxide is released by heating:

 $\text{NaNO}_3$  $\text{Pb}(\text{NO}_3)_2$  $\text{KNO}_3$  $\text{NaNO}_2$ 



Correct



Unattempted



Incorrect



5/12

Q : Which of the following metals gives  $H_2$  gas with  $HNO_3$ ?



Mercury



Copper



Magnesium



Zinc





Correct



Unattempted



Incorrect



6/12

Q : Which of the following is not an oxide of Nitrogen:

 $N_2O$  $N_2O_3$  $N_3O_5$  $N_2O_5$ 



Correct



Unattempted



Incorrect



7/12

Q : In living matter, nitrogen is not found in the form of:



Protein



Carbohydrates



Urea



Amino acids



Correct



Unattempted



Incorrect



8/12

Q :  $\text{N}_2\text{O}$  is reduced to nitrogen on passing over:



Red hot iron



Red hot copper



Phosphorus



Lead







Correct



Unattempted



Incorrect



9/12

Q : Phosphorous burns in  $\text{NO}_2$  releasing.



NO

 $\text{N}_2\text{O}_3$  $\text{O}_2$  $\text{N}_2$ 



Correct



Unattempted



Incorrect



10/12

Q : Which of the following does not react with  $\text{HNO}_3$ ?



Gold



Plati0num



Titanium



All above



Correct



Unattempted



Incorrect



11/12

Q : Colour of liquid  $\text{N}_2\text{O}_4$  is:

White



Pale yellow



Reddish brown



Violet





Correct



Unattempted



Incorrect



12/12

Q :  $\text{N}_2\text{O}_4$  on heating upto  $620^\circ\text{C}$ , decomposes to generate

 $\text{N}_2$  &  $\text{O}_2$  $\text{NO}_2$  &  $\text{O}_2$  $\text{NO}$  &  $\text{O}_2$  $\text{N}_2\text{O}_3$  &  $\text{O}_2$ 



## QUIZZES

### Practice Test 85



5 Questions



5 min

#### Topics

PHOSPHOROUS AND ITS COMPOUNDS,  
Occurrence

[Start Quiz](#)



1/5



5 min



Hint

Q : When red phosphorus is heated with  $\text{HNO}_3$  it forms.

 $\text{H}_3\text{PO}_4$  $\text{HPO}_3$  $\text{H}_2\text{PO}_3$  $\text{HPO}_2$



2/5



5 min



Hint

Q : +3 oxidation state of phosphorus is associated with:



Phosphorus acid



Metaphosphoric acid



Hypophosphorus acid



Orthophosphoric acid



3/5



5 min



Hint

Q : Indicate the formula of metaphosphoric acid:

 $\text{H}_4\text{P}_2\text{O}_7$  $\text{H}_2\text{PO}_3$  $\text{H}_3\text{PO}_4$  $\text{HPO}_3$





4/5



5 min



Hint

Q : Phosphorous exist in how many allotropic forms:



6



3



4



5



5/5



5 min



Hint

Q : Phosphorus helps the growth of



Root



Leave



Stem



Seed



Correct



Unattempted



Incorrect



1/5

Q : When red phosphorus is heated with  $\text{HNO}_3$  it forms.

 $\text{H}_3\text{PO}_4$  $\text{HPO}_3$  $\text{H}_2\text{PO}_3$  $\text{HPO}_2$ 



Correct



Unattempted



Incorrect



2/5

Q : +3 oxidation state of phosphorus is associated with:



Phosphorus acid



Metaphosphoric acid



Hypophosphorus acid



Orthophosphoric acid



Correct



Unattempted



Incorrect



3/5

Q : Indicate the formula of metaphosphoric acid:

 $\text{H}_4\text{P}_2\text{O}_7$  $\text{H}_2\text{PO}_3$  $\text{H}_3\text{PO}_4$  $\text{HPO}_3$ 



Correct



Unattempted



Incorrect



4/5

Q : Phosphorous exist in how many allotropic forms:



6



3



4



5





Correct



Unattempted



Incorrect



5/5

Q : Phosphorus helps the growth of



Root



Leave



Stem



Seed



## QUIZZES

### Practice Test 86



5 Questions



5 min

#### Topics

GROUP VIA ELEMENTS, Electronic configuration  
and physical properties of group VIA  
elements

[Start Quiz](#)





1/5



5 min



Hint

Q : The compound in which sulphur exhibit +2 oxidation state



Metallic sulphates



Metallic sulphites



metallic sulphides



Metallic thiosulphates



2/5



5 min



Hint

Q : Physical state of sulphur is:



Gas



Liquid



Solid



None of these



3/5



5 min



Hint

Q : Out of all the elements of group VIA, the highest melting and boiling points is shown by the element



Te



Se



S



Pb



4/5



5 min



Hint

Q : Which of the following specie has the maximum number of unpaired electrons?

 $O_2$  $O_2^+$  $O_2^-$  $O_2^{2-}$



5/5



5 min



Hint

Q : Which of the following specie has the maximum number of unpaired electrons?

 $O_2$  $O_2^+$  $O_2^-$  $O_2^{2-}$



Correct



Unattempted



Incorrect



1/5

Q : The compound in which sulphur exhibit +2 oxidation state



Metallic sulphates



Metallic sulphites



metallic sulphides



Metallic thiosulphates





Correct



Unattempted



Incorrect



2/5

Q : Physical state of sulphur is:



Gas



Liquid



Solid



None of these



Correct



Unattempted



Incorrect



3/5

Q : Out of all the elements of group VIA, the highest melting and boiling points is shown by the element



Te



Se



S



Pb





Correct



Unattempted



Incorrect



4/5

Q : Which of the following specie has the maximum number of unpaired electrons?

 $O_2$  $O_2^+$  $O_2^-$  $O_2^{2-}$ 



Correct



Unattempted



Incorrect



5/5

Q : Which of the following specie has the maximum number of unpaired electrons?

 $O_2$  $O_2^+$  $O_2^-$  $O_2^{2-}$



## QUIZZES

### Practice Test 87



5 Questions



5 min

#### Topics

SULPHURIC ACID, Manufacturing of sulphuric acid

[Start Quiz](#)



1/5



5 min



Hint

Q : Which compound gives carbon with conc.  $\text{H}_2\text{SO}_4$ .



Starch



Ethyl alcohol



Oxalic acid



Formic acid



2/5



5 min



Hint

Q : When sugar is treated with conc.  $\text{H}_2\text{SO}_4$ , the sugar becomes black due to:



Decolourization



Dehydration



Hydrolysis



Hydration



3/5



5 min



Hint

Q :  $\text{SO}_3$  is not absorbed in water directly to form  $\text{H}_2\text{SO}_4$  because



A The reaction does not go the completion



B The reaction is quite slow



C The reaction is highly exothermic



D  $\text{SO}_3$  is insoluble in water



4/5



5 min



Hint

Q : Which catalyst is used in contact process?

 $\text{Fe}_2\text{O}_3$  $\text{V}_2\text{O}_5$  $\text{SO}_3$  $\text{Ag}_2\text{O}$



5/5



5 min



Hint

Q : Which catalyst is used in contact process for manufacture of  $\text{H}_2\text{SO}_4$

 $\text{Fe}_2\text{O}_3$  $\text{V}_2\text{O}_5$  $\text{Al}_2\text{O}_3$  $\text{MnO}_2$





Correct



Unattempted



Incorrect



1/5

Q : Which compound gives carbon with conc.  $\text{H}_2\text{SO}_4$ .



Starch



Ethyl alcohol



Oxalic acid



Formic acid





Correct



Unattempted



Incorrect



2/5

Q : When sugar is treated with conc.  $\text{H}_2\text{SO}_4$ , the sugar becomes black due to:



Decolourization



Dehydration



Hydrolysis



Hydration



Correct



Unattempted



Incorrect



3/5

Q :  $\text{SO}_3$  is not absorbed in water directly to form  $\text{H}_2\text{SO}_4$  because



A The reaction does not go the completion



B The reaction is quite slow



C The reaction is highly exothermic



D  $\text{SO}_3$  is insoluble in water



Correct



Unattempted



Incorrect



4/5

Q : Which catalyst is used in contact process?

 $\text{Fe}_2\text{O}_3$  $\text{V}_2\text{O}_5$  $\text{SO}_3$  $\text{Ag}_2\text{O}$ 



Correct



Unattempted



Incorrect



5/5

Q : Which catalyst is used in contact process for manufacture of  $\text{H}_2\text{SO}_4$

 $\text{Fe}_2\text{O}_3$  $\text{V}_2\text{O}_5$  $\text{Al}_2\text{O}_3$  $\text{MnO}_2$ 



## QUIZZES

### Practice Test 88



5 Questions



5 min

#### Topics

INTRODUCTION OF HALOGENS AND PHYSICAL  
PROPERTIES

Start Quiz



1/5



5 min



Hint

Q : Which is the radioactive element of group VII-A:



Br



Cl



Ar



I



2/5



5 min



Hint

Q : The ionization energy of chlorine is:



1681 kJ/mol



1251 kJ/mol



1140 kJ/mol



1008 kJ/mol





3/5



5 min



Hint

Q : The most stable isotope of astatine has half life



8.6 h



8.3 h



7.5 h



8.9 h



4/5



5 min



Hint

Q : Electronegativity of fluorine is:



4.5



4.0



2.8



3.5



5/5



5 min



Hint

Q : Point out the correct statement:



Halogens can mutually displace each other from the solution of their compounds with metals



Halogens are all capable of showing several oxidation states



Halogens are all diatomic and form divalent ions



Halogens are diatomic and form univalent ions.



Correct



Unattempted



Incorrect



1/5

Q : Which is the radioactive element of group VII-A:



Br



Cl



Ar



I





Correct



Unattempted



Incorrect



2/5

Q : The ionization energy of chlorine is:



1681 kJ/mol



1251 kJ/mol



1140 kJ/mol



1008 kJ/mol





Correct



Unattempted



Incorrect



3/5

Q : The most stable isotope of astatine has half life



8.6 h



8.3 h



7.5 h



8.9 h





Correct



Unattempted



Incorrect



4/5

Q : Electronegativity of fluorine is:



4.5



4.0



2.8



3.5





Correct



Unattempted



Incorrect



5/5

Q : Point out the correct statement:



A Halogens can mutually displace each other from the solution of their compounds with metals



B Halogens are all capable of showing several oxidation states



C Halogens are all diatomic and form divalent ions



D Halogens are diatomic and form univalent ions.







## QUIZZES

### Practice Test 89



3 Questions



5 min

#### Topics

OCCURRENCE OF HALOGENS, PECULIAR  
BEHAVIOR OF FLUORINE

[Start Quiz](#)



1/3



5 min



Hint

Q : Halite is the name of:



KCl

 $\text{MgCl}_2$ 

NaCl

 $\text{CaF}_2$



2/3



5 min



Hint

Q : Which halogen directly combines with noble gases:

 $F_2$  $Cl_2$  $Br_2$  $I_2$



3/3



5 min



Hint

Q :  $\text{CaF}_2$ ,  $\text{MgF}_2$ , and  $\text{BaF}_2$  are insoluble in water due to:



Low dissociation energy



High lattice energy

Smaller size of  $\text{F}_2$ 

None of these



Correct



Unattempted



Incorrect



1/3

Q : Halite is the name of:



KCl

 $\text{MgCl}_2$ 

NaCl

 $\text{CaF}_2$



Correct



Unattempted



Incorrect



2/3

Q : Which halogen directly combines with noble gases:

 $F_2$  $Cl_2$  $Br_2$  $I_2$



Correct



Unattempted



Incorrect



3/3

Q :  $\text{CaF}_2$ ,  $\text{MgF}_2$ , and  $\text{BaF}_2$  are insoluble in water due to:



Low dissociation energy



High lattice energy

Smaller size of  $\text{F}_2$ 

None of these



## QUIZZES

### Practice Test 90



5 Questions



5 min

Topics

OXIDIZING PROPERTIES

Start Quiz





1/5



5 min



Hint

Q : In halogens, the order of decreasing power as an oxidizing agent is

 $F_2 > Cl_2 > Br_2 > I_2$  $F_2 < Cl_2 < Br_2 < I_2$  $I_2 > Cl_2 > Br_2 > F_2$  $F_2 > I_2 > Br_2 > Cl_2$



2/5



5 min



Hint

Q : Which of the following factors do not affect the oxidizing power of halogen



Energy of dissociation



Size of atom



Electron affinity of atoms



Hydration energies of ions



3/5



5 min



Hint

Q : Which halogen will react spontaneously with  $\text{Au}_{(s)}$  to produce  $\text{Au}^{3+}$ ?

 $\text{Br}_2$  $\text{F}_2$  $\text{I}_2$  $\text{Cl}_2$



4/5



5 min



Hint

Q : Which of the following species would you not expect to undergo oxidation

 $F^-$  $I^-$  $Br^-$  $Cl^-$



5/5



5 min



Hint

Q : Which is the weakest oxidizing agent

 $\text{Br}_2$  $\text{Cl}_2$  $\text{F}_2$  $\text{I}_2$



Correct



Unattempted



Incorrect



1/5

Q : In halogens, the order of decreasing power as an oxidizing agent is

 $F_2 > Cl_2 > Br_2 > I_2$  $F_2 < Cl_2 < Br_2 < I_2$  $I_2 > Cl_2 > Br_2 > F_2$  $F_2 > I_2 > Br_2 > Cl_2$



Correct



Unattempted



Incorrect



2/5

Q : Which of the following factors do not affect the oxidizing power of halogen



Energy of dissociation



Size of atom



Electron affinity of atoms



Hydration energies of ions



Correct



Unattempted



Incorrect



3/5

Q : Which halogen will react spontaneously with  $\text{Au}_{(s)}$  to produce  $\text{Au}^{3+}$ ?

 $\text{Br}_2$  $\text{F}_2$  $\text{I}_2$  $\text{Cl}_2$ 





Correct



Unattempted



Incorrect



4/5

Q : Which of the following species would you not expect to undergo oxidation

 $F^-$  $I^-$  $Br^-$  $Cl^-$ 



Correct



Unattempted



Incorrect



5/5

Q : Which is the weakest oxidizing agent

 $\text{Br}_2$  $\text{Cl}_2$  $\text{F}_2$  $\text{I}_2$ 



## QUIZZES

### Practice Test 91



5 Questions



5 min

#### Topics

Hydrogen halides - properties, Oxides of chlorine, Oxyacids - nomenclature, Perchloric acid, Bleaching powder - preparation

[Start Quiz](#)



1/5



5 min



Hint

Q : An element that has a high ionization energy and tends to be chemically inactive would most likely to be



An alkali metal



A transition element



A noble gas



A halogen



2/5



5 min



Hint

Q : The most strong oxyacid is:



HBrO



HIO



HClO



Equally strong



3/5



5 min



Hint

Q : Which of the following is the most Acidic Oxide?

A



B



C



D





4/5



5 min



Hint

Q : Bleaching powder may be produced by passing chlorine over



Calcium carbonate



Hydrated calcium sulphate



Anhydrous calcium sulphate



Calcium hydroxide



5/5



5 min



Hint

Q : Which is the strongest acid?

 $\text{HClO}$  $\text{HClO}_2$  $\text{HClO}_3$  $\text{HClO}_4$





Correct



Unattempted



Incorrect



1/5

Q : An element that has a high ionization energy and tends to be chemically inactive would most likely to be



An alkali metal



A transition element



A noble gas



A halogen





Correct



Unattempted



Incorrect



2/5

Q : The most strong oxyacid is:



HBrO



HIO



HClO



Equally strong





Correct



Unattempted



Incorrect



3/5

Q : Which of the following is the most Acidic Oxide?





Correct



Unattempted



Incorrect



4/5

Q : Bleaching powder may be produced by passing chlorine over



Calcium carbonate



Hydrated calcium sulphate



Anhydrous calcium sulphate



Calcium hydroxide





Correct



Unattempted



Incorrect



5/5

Q : Which is the strongest acid?

 $\text{HClO}$  $\text{HClO}_2$  $\text{HClO}_3$  $\text{HClO}_4$ 



## QUIZZES

### Practice Test 92



5 Questions



5 min

#### Topics

Electronic configuration of d-block elements,  
Typical and non typical transition elements

[Start Quiz](#)



1/5



5 min



Hint

Q : f-block elements are also called:



A Non-typical transition elements



B Outer transition elements



C Inner transition elements



D Normal transition elements



2/5



5 min



Hint

Q : Which of the following is non-typical transition element atomic numbers are within parenthesis



Cd (48)



Mo (42)



Cr (24)



Fe (26)





3/5



5 min



Hint

Q : Which one of following metal exist in liquid state at 0room temperature



Hg



Al



Cu



Fe



4/5



5 min



Hint

Q : The non typical transition element is:



Cr



Mn



Zn



Fe



5/5



5 min



Hint

Q : Group VI-B of transition element contains:



Zn, Cd, Hg



Fe, Ru, Os



Cr, Mo, W



Mn, Te, Re



Correct



Unattempted



Incorrect



1/5

Q : f-block elements are also called:



Non-typical transition elements



Outer transition elements



Inner transition elements



Normal transition elements





Correct



Unattempted



Incorrect



2/5

Q : Which of the following is non-typical transition element atomic numbers are within parenthesis



Cd (48)



Mo (42)



Cr (24)



Fe (26)





Correct



Unattempted



Incorrect



3/5

Q : Which one of following metal exist in liquid state at 0room temperature



Hg



Al



Cu



Fe





Correct



Unattempted



Incorrect



4/5

Q : The non typical transition element is:



Cr



Mn



Zn



Fe





Correct



Unattempted



Incorrect



5/5

Q : Group VI-B of transition element contains:



Zn, Cd, Hg



Fe, Ru, Os



Cr, Mo, W



Mn, Te, Re







## QUIZZES

### Practice Test 93



5 Questions



5 min

#### Topics

Similar Properties of transition elements,  
Binding energies, Paramagnetism, Oxidation  
states, Colour of complexes

[Start Quiz](#)



1/5



5 min



Hint

Q : Those substances which are weakly repelled by a strong magnetic field are called



Paramagnetic substances



Diamagnetic substances



Ferromagnetic substances



None



2/5



5 min



Hint

Q : The highest oxidation state of Mn is in

 $\text{K}_2\text{MnO}_4$  $\text{KMnO}_4$  $\text{Mn}_2\text{O}_3$  $\text{MnO}_2$



3/5



5 min



Hint

Q : The Strength of binding energy of transition elements depends upon



Number of electron pairs



Number of unpaired electrons



Number of neutrons



Number of protons



4/5



5 min



Hint

Q : Which statement about transition elements is correct



A They are usually colourless



B Their ionization potential is high than s-block and low than p-block



C They are non-paramagnetic



D They form complexes



5/5



5 min



Hint

Q : Which one of the following ions is colourless?

 $\text{Cr}^{3+}$  $\text{Zn}^{2+}$  $\text{Ni}^{2+}$  $\text{Co}^{2+}$



Correct



Unattempted



Incorrect



1/5

Q : Those substances which are weakly repelled by a strong magnetic field are called



Paramagnetic substances



Diamagnetic substances



Ferromagnetic substances



None





Correct



Unattempted



Incorrect



2/5

Q : The highest oxidation state of Mn is in

 $\text{K}_2\text{MnO}_4$  $\text{KMnO}_4$  $\text{Mn}_2\text{O}_3$  $\text{MnO}_2$ 





Correct



Unattempted



Incorrect



3/5

Q : The Strength of binding energy of transition elements depends upon



Number of electron pairs



Number of unpaired electrons



Number of neutrons



Number of protons





Correct



Unattempted



Incorrect



4/5

Q : Which statement about transition elements is correct



A They are usually colourless



B Their ionization potential is high than s-block and low than p-block



C They are non-paramagnetic



D They form complexes





Correct



Unattempted



Incorrect



5/5

Q : Which one of the following ions is colourless?

 $\text{Cr}^{3+}$  $\text{Zn}^{2+}$  $\text{Ni}^{2+}$  $\text{Co}^{2+}$ 



## QUIZZES

### Practice Test 94



5 Questions



5 min

#### Topics

Corrosion, Electrochemical theory of corrosion, Prevention from corrosion, Tin plating or coating of iron with tin, Galvanizing or Zinc coating

[Start Quiz](#)



1/5



5 min



Hint

Q : Which is more effective for prevention from corrosion



Cathode coating



Anode coating



Both are effective



Tin coating



2/5



5 min



Hint

Q : If Al and Cu are in contact with each other, then



Al will corrode



Cu will corrode



Both will corrode



Both remain intact



3/5



5 min



Hint

Q : Galvanizing means protecting iron from rust by using



Zn



Ni



Cr



Cd



4/5



5 min



Hint

Q : When metal comes into contact with gases of atmosphere the surface becomes coated with



Oxides



Carbonates



Sulphates



All of these





5/5



5 min



Hint

Q : When tin coating on iron surface is damaged a galvanic cell is established in which tin act as a



Anode



Salt bridge



Cathode



None



Correct



Unattempted



Incorrect



1/5

Q : Which is more effective for prevention from corrosion



Cathode coating



Anode coating



Both are effective



Tin coating



Correct



Unattempted



Incorrect



2/5

Q : If Al and Cu are in contact with each other, then



Al will corrode



Cu will corrode



Both will corrode



Both remain intact





Correct



Unattempted



Incorrect



3/5

Q : Galvanizing means protecting iron from rust by using



Zn



Ni



Cr



Cd





Correct



Unattempted



Incorrect



4/5

Q : When metal comes into contact with gases of atmosphere the surface becomes coated with



Oxides



Carbonates



Sulphates



All of these



Correct



Unattempted



Incorrect



5/5

Q : When tin coating on iron surface is damaged a galvanic cell is established in which tin act as a



Anode



Salt bridge



Cathode



None

